

EXHIBIT 8

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Alexandria Division

- - - - -

UNITED STATES OF AMERICA,
et al,

Plaintiffs,

vs.

GOOGLE, LLC,

Defendant.

Case Number:

1:23-cv-00108-
LMB-JFA

- - - - -

Video Deposition of
ROBIN E. LEE, Ph.D.
Friday, March 15, 2024
9:39 a.m.

Veritext Job 6456904

Reported by: Laurie Donovan, RPR, CRR, CLR

<p style="text-align: right;">Page 2</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6 March 15, 2024</p> <p>7 9:38 a.m.</p> <p>8</p> <p>9 Video Deposition of ROBIN S. LEE, Ph.D.,</p> <p>10 held in person in Washington, D.C., with the</p> <p>11 witness and all parties participating in person (</p> <p>12 a few remotely), pursuant to the Rules of the</p> <p>13 United States District Court for the Eastern</p> <p>14 District of Virginia, Alexandria Division, subject</p> <p>15 to such stipulations as may be recited herein or</p> <p>16 attached hereto, before Laurie Donovan, a</p> <p>17 Registered Professional Reporter and notary public</p> <p>18 of the District of Columbia, who officiated in</p> <p>19 administering the oath to the witness.</p> <p>20</p> <p>21</p> <p>22</p>	<p style="text-align: right;">Page 4</p> <p>1 (Appearances continued)</p> <p>2 ALSO PRESENT:</p> <p>3 Warren Brey, videographer</p> <p>4 Bryon Becker</p> <p>5 Chris Erickson, Axinn Veltrop Harkrider</p> <p>6 Justin Wood</p> <p>7 Victor Liu</p> <p>8 Sophia Casten</p> <p>9 Colleen Dugan</p> <p>10 Suzanne Majewski</p> <p>11 Dave Barth (Bates White)</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p>
<p style="text-align: right;">Page 3</p> <p>1 A P P E A R A N C E S</p> <p>2 ON BEHALF OF THE PLAINTIFFS:</p> <p>3 U.S. Department of Justice</p> <p>4 Antitrust Division</p> <p>5 450 Golden Gate Avenue</p> <p>6 Room 10-0101</p> <p>7 San Francisco, California 94102</p> <p>8 (415)934-5300</p> <p>9 By: Brent Nakamura, Esq.</p> <p>10 brent.nakamura@usdoj.gov</p> <p>11 ON BEHALF OF THE DEFENDANT:</p> <p>12 Paul Weiss Rifkind Wharton Garrison LLP</p> <p>13 2001 K Street, NW</p> <p>14 Washington, D.C. 20006</p> <p>15 (202)223-7300</p> <p>16 By: William Isaacson, Esq.</p> <p>17 wisaacson@paulweiss.com</p> <p>18 Erica Spevack, Esq.</p> <p>19 espevack@paulweiss.com</p> <p>20</p> <p>21</p> <p>22</p>	<p style="text-align: right;">Page 5</p> <p>1 EXAMINATION INDEX</p> <p>2 PAGE</p> <p>3 EXAMINATION BY MR. ISAACSON 9</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9 E X H I B I T S</p> <p>10 EXHIBIT DESCRIPTION PAGE</p> <p>11 Exhibit 1 Expert Report of Robin S. Lee,</p> <p>12 Ph.D., December 22, 2023 34</p> <p>13 Exhibit 2 Expert Rebuttal Report of Robin</p> <p>14 S. Lee, Ph.D., February 13, 2024 34</p> <p>15 Exhibit 3 Expert Supplemental Report of</p> <p>16 Robin S. Lee, Ph.D., March 4,</p> <p>17 2024 34</p> <p>18 Exhibit 4 "Avid Display Business Overview,"</p> <p>19 November 2020, by Sissie Hsiao,</p> <p>20 PowerPoint presentation,</p> <p>21 Bates GOOG-DOJ-AT-00855803 80</p> <p>22</p>

<p style="text-align: right;">Page 30</p> <p>1 THE WITNESS: I'm not providing a</p> <p>2 precise number of damages for these</p> <p>3 particular advertising customers.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q And based on your background in</p> <p>6 economics and industrial organization, as I</p> <p>7 understand it, you are not offering expert</p> <p>8 opinions on the meaning of any individual</p> <p>9 documents in this case?</p> <p>10 MR. NAKAMURA: Objection to form.</p> <p>11 THE WITNESS: Can you restate your</p> <p>12 question or rephrase it?</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q Are you offering expert opinions on the</p> <p>15 meaning of any individual documents in this case?</p> <p>16 MR. NAKAMURA: Objection to form.</p> <p>17 THE REPORTER: Meaning?</p> <p>18 MR. ISAACSON: Meaning, yes.</p> <p>19 THE WITNESS: I'm not.</p> <p>20 MR. NAKAMURA: Same objection.</p> <p>21 BY MR. ISAACSON:</p> <p>22 Q And you are not expressing an opinion in</p>	<p style="text-align: right;">Page 32</p> <p>1 opinion that certain Google products, in</p> <p>2 particular -- I'm sure we'll discuss them --</p> <p>3 Google Ads, AdX, and DFP, possess substantial</p> <p>4 and sustained market power protected by</p> <p>5 significant barriers to entry, which are</p> <p>6 associated with economic profits.</p> <p>7 BY MR. ISAACSON:</p> <p>8 Q Are you expressing an opinion in this</p> <p>9 case as to the amount of economic profits for</p> <p>10 Google ad tech products?</p> <p>11 MR. NAKAMURA: Objection to form.</p> <p>12 THE WITNESS: As I stated before, I'm</p> <p>13 expressing an opinion regarding the extent of</p> <p>14 market power for these products which would</p> <p>15 be associated with a positive economic</p> <p>16 profit.</p> <p>17 BY MR. ISAACSON:</p> <p>18 Q All right. My question went to the</p> <p>19 amount of economic profits.</p> <p>20 Are you expressing an opinion in this</p> <p>21 case as to the amount of economic profits for</p> <p>22 Google ad tech products?</p>
<p style="text-align: right;">Page 31</p> <p>1 this case on the accounting profits of any Google</p> <p>2 product area; is that correct?</p> <p>3 MR. NAKAMURA: Objection to form.</p> <p>4 THE WITNESS: Can you restate your</p> <p>5 question, please.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q Sure. You are not expressing an opinion</p> <p>8 in this case on the accounting profits of any</p> <p>9 Google product area in this case; am I correct?</p> <p>10 MR. NAKAMURA: Objection to form.</p> <p>11 THE WITNESS: So in my reports I do</p> <p>12 discuss accounting profits and their</p> <p>13 differences from economic profits, but I'm</p> <p>14 not expressing opinions as to the level of</p> <p>15 accounting profits for Google, Google's ad</p> <p>16 tech products.</p> <p>17 BY MR. ISAACSON:</p> <p>18 Q Are you expressing an opinion in this</p> <p>19 case as to the level of economic product --</p> <p>20 economic profits for Google's ad tech products?</p> <p>21 MR. NAKAMURA: Objection to form.</p> <p>22 THE WITNESS: So I'm expressing an</p>	<p style="text-align: right;">Page 33</p> <p>1 MR. NAKAMURA: Objection to form.</p> <p>2 THE WITNESS: My opinion is that Google</p> <p>3 Ads, AdX and DFP are earning economic profits</p> <p>4 consistent with their possession of</p> <p>5 substantial and sustained market power.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q And have you expressed an opinion as to</p> <p>8 the amount of those profits, those economic</p> <p>9 profits that you just referred to?</p> <p>10 A I believe that is saying something about</p> <p>11 the amount, what I just said.</p> <p>12 Q Is saying -- are you able to express an</p> <p>13 opinion as to the amount of economic profits from</p> <p>14 Google ad tech products in a dollar amount?</p> <p>15 MR. NAKAMURA: Objection to form.</p> <p>16 THE WITNESS: So I'm not providing a</p> <p>17 specific dollar number for that measure.</p> <p>18 BY MR. ISAACSON:</p> <p>19 Q Before you were retained in this case,</p> <p>20 had you heard the term "open-web display</p> <p>21 advertising"?</p> <p>22 A So before I was retained by this case, I</p>

<p style="text-align: right;">Page 34</p> <p>1 recall hearing the term "open-web" in contrast 2 with "walled garden," and I recall being familiar 3 with display advertising. I think I noted my 4 experience 15 years prior, looking into this 5 space. 6 Q And before this case, had you heard the 7 term "open-web display advertising" as one term 8 with all four words? 9 A I do not recall having come across those 10 four words together. 11 (Exhibit 1 was marked for 12 identification.) 13 (Exhibit 2 was marked for 14 identification.) 15 (Exhibit 3 was marked for 16 identification.) 17 BY MR. ISAACSON: 18 Q We've marked as Exhibit 1 your opening 19 expert report, we've marked as Exhibit 2 your 20 rebuttal report, and Exhibit 3 is your 21 supplemental report. 22 You have them all in front of you for</p>	<p style="text-align: right;">Page 36</p> <p>1 MR. NAKAMURA: Objection to form. 2 THE WITNESS: I'm sorry. Can you repeat 3 your question, please. 4 BY MR. ISAACSON: 5 Q Sure. 6 So in that bullet point, it lists 7 markets, potential markets for publisher ad 8 servers, ad exchanges, and advertiser ad networks, 9 all for open-web display advertising. You were 10 asked to determine whether those are relevant 11 antitrust markets. 12 My question is: Were you asked to 13 consider any other market definition than those 14 potential market definitions? 15 A So I recall looking into whether there 16 is a relevant market for demand-side platforms, a 17 relevant antitrust product market for demand-side 18 platforms. 19 Q All right. Other than looking into a 20 relevant market for demand-side platforms, were 21 you asked to consider any other potential relevant 22 markets other than those which are listed in</p>
<p style="text-align: right;">Page 35</p> <p>1 ease of access at any point. 2 If I can ask you to look at paragraph 7 3 of your opening report. That's Exhibit 1. In 4 paragraph 7 you say, "I have been asked by counsel 5 at the Department of Justice," and then you list a 6 number of things. 7 In the first bullet point, you say -- 8 again, with reference to "I have been asked by 9 counsel at the Department of Justice to -- 10 Determine whether publisher ad servers, ad 11 exchanges, and advertiser ad networks are open-web 12 display advertising, both worldwide . . . and in 13 the United States, are relevant antitrust 14 markets." 15 I skipped a parenthetical about how 16 worldwide is developed. 17 The -- were you asked to consider any 18 other market definition that would be at issue in 19 this case other than what is said there, whether 20 publisher ad servers, ad exchanges and advertiser 21 ad networks for open-web display advertising are 22 relevant antitrust markets?</p>	<p style="text-align: right;">Page 37</p> <p>1 paragraph 7? 2 MR. NAKAMURA: I'll instruct Professor 3 Lee to answer to the extent to which he 4 considered the other markets that counsel 5 asked about, not any communications from 6 counsel to him. 7 THE WITNESS: So I also considered a 8 relevant antitrust product market for a 9 broader set of bidding tools, which includes 10 advertiser ad networks and demand-side 11 platforms, but as I note in my reports, 12 concluded that the smaller subset of 13 advertiser ad networks comprises a relevant 14 antitrust product market. 15 BY MR. ISAACSON: 16 Q So other than markets for publisher ad 17 servers, ad exchanges, advertiser ad networks, all 18 for open-web display advertising, or a relevant 19 market for demand-side platforms or for ad 20 networks and demand-side platforms, did you 21 consider any other potential market definitions in 22 this case?</p>

<p style="text-align: right;">Page 38</p> <p>1 MR. NAKAMURA: Objection to form.</p> <p>2 THE WITNESS: So in this case, as I note</p> <p>3 in my rebuttal report, I considered</p> <p>4 alternative markets that were proposed by</p> <p>5 Dr. Israel and potentially Doctor or</p> <p>6 Professor Ghose, but those alternative market</p> <p>7 definitions proposed by Google's experts or</p> <p>8 others that I examined and opined are not</p> <p>9 appropriate for evaluating Google's market</p> <p>10 power over its ad tech products that I</p> <p>11 examined for evaluating the competitive</p> <p>12 effects of its conduct that I examined.</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q The -- do you know if the term "open-web</p> <p>15 display advertising" existed before counsel for</p> <p>16 the Department of Justice asked you to consider</p> <p>17 that term for your market definition?</p> <p>18 MR. NAKAMURA: Objection to form.</p> <p>19 THE WITNESS: So as an economist, I'm</p> <p>20 interpreting "open-web display advertising"</p> <p>21 as referring to a set of transactions with</p> <p>22 certain characteristics used to be precise</p>	<p style="text-align: right;">Page 40</p> <p>1 display advertising or the underlying digital</p> <p>2 advertisements themselves?</p> <p>3 BY MR. ISAACSON:</p> <p>4 Q I'm going to ask you if you've seen</p> <p>5 industry sources reporting market shares for any</p> <p>6 products that would include the term "open-web</p> <p>7 display advertising."</p> <p>8 A So can I ask you to rephrase the</p> <p>9 question? You're asking if I've seen market</p> <p>10 shares of products that sell open-web display</p> <p>11 advertising?</p> <p>12 Q Any type of products. Does it -- like</p> <p>13 it can be any market, any market share where the</p> <p>14 terms "open-web display advertising" is used.</p> <p>15 MR. NAKAMURA: Objection to form.</p> <p>16 THE WITNESS: So in my -- maybe I'm not</p> <p>17 understanding your question correctly, but in</p> <p>18 my report, for example, I've seen a Google</p> <p>19 document talking about -- discussing DFP's</p> <p>20 share across various measures of what they</p> <p>21 refer to as "addressable inventory" or "not</p> <p>22 walled garden," and the addressable inventory</p>
<p style="text-align: right;">Page 39</p> <p>1 about the products that I'm examining.</p> <p>2 I have seen materials -- I don't recall</p> <p>3 the precise dates for those documents --</p> <p>4 where both the term "open-web," the term</p> <p>5 "display advertising," as well as I've seen</p> <p>6 documents from firms where "open-web display</p> <p>7 advertising," those four words, have been</p> <p>8 used.</p> <p>9 BY MR. ISAACSON:</p> <p>10 Q Do you believe you've seen documents</p> <p>11 where all four words, "open-web display</p> <p>12 advertising," were used together?</p> <p>13 A I recall seeing documents produced by</p> <p>14 Adobe and Facebook, although one of them may be an</p> <p>15 industry source that used open-web display.</p> <p>16 Q The -- have you seen any industry</p> <p>17 sources that report market shares for open-web</p> <p>18 display advertising?</p> <p>19 MR. NAKAMURA: Objection to form.</p> <p>20 THE WITNESS: So if I may ask you to be</p> <p>21 more specific. Are you referring to ad tech</p> <p>22 products that facilitate the sale of open-web</p>	<p style="text-align: right;">Page 41</p> <p>1 overlaps with open-web publishers, publishers</p> <p>2 that don't -- that aren't using integrated ad</p> <p>3 tech tools to sell their inventory.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q We can talk about addressable inventory</p> <p>6 later, but whether it's advertising, technology,</p> <p>7 whatever product you want to name, have you seen</p> <p>8 any industry sources that report market shares for</p> <p>9 a market using the words "open-web display</p> <p>10 advertising"?</p> <p>11 MR. NAKAMURA: Objection to form.</p> <p>12 THE WITNESS: So those documents I</p> <p>13 referenced earlier, I don't recall if they</p> <p>14 report any market share figures. I don't</p> <p>15 recall, sitting here today.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q And let me see if I can -- so there are</p> <p>18 public industry sources that report on -- report</p> <p>19 data for digital advertising, correct?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 THE WITNESS: Yes, I believe there are</p> <p>22 public sources, including e-Marketer, that</p>

<p style="text-align: right;">Page 42</p> <p>1 looks at digital advertising.</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q Have you seen any industry sources that</p> <p>4 report public data that would reflect shares of</p> <p>5 any market that uses the term "open-web display</p> <p>6 advertising"?</p> <p>7 MR. NAKAMURA: Objection to form.</p> <p>8 THE WITNESS: I think, as I mentioned</p> <p>9 before, sitting here today, I don't recall if</p> <p>10 any of the documents that I remember using</p> <p>11 the terms "open-web display" report market</p> <p>12 share figures or rely upon public data.</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q And is it also the case that, sitting</p> <p>15 here today, you don't recall any documents from</p> <p>16 Google that report market shares using the term</p> <p>17 "open-web display advertising"?</p> <p>18 A Sitting here today, I do not recall any</p> <p>19 Google documents using the term "open-web display</p> <p>20 advertising" that report market shares for ad tech</p> <p>21 products.</p> <p>22 Q And sitting here today, from the</p>	<p style="text-align: right;">Page 44</p> <p>1 using the term "open-web" to refer to publisher</p> <p>2 inventory or publisher web inventory that is not</p> <p>3 sold through integrated ad tech products, and it's</p> <p>4 a description of what that set of inventory is.</p> <p>5 I use "display advertising" to refer to</p> <p>6 a particular form of digital advertising, and so</p> <p>7 when I use those terms, it's meant to clarify the</p> <p>8 sets of products and transactions over which</p> <p>9 certain calculations are made.</p> <p>10 Q I'm not asking you how you're using the</p> <p>11 term or why you're using the term.</p> <p>12 You, in your reports, do estimates of</p> <p>13 market shares where -- different markets where you</p> <p>14 use the term "open-web display advertising,"</p> <p>15 correct?</p> <p>16 A So the relevant product markets that I</p> <p>17 evaluate are those involving advertiser ad</p> <p>18 networks, ad exchanges, and publisher ad servers,</p> <p>19 so those are the markets.</p> <p>20 Q So you estimate market shares in your</p> <p>21 report for a market of publisher ad servers for</p> <p>22 open-web display advertising, correct?</p>
<p style="text-align: right;">Page 43</p> <p>1 third-party documents that have been made</p> <p>2 available to you from this case, am I correct you</p> <p>3 do not recall any third-party documents that use</p> <p>4 the term "open-web display advertising" to report</p> <p>5 market shares for any products?</p> <p>6 A So as I noted earlier, I recall</p> <p>7 third-party documents using the term "open-web</p> <p>8 display." I do not recall if they reported market</p> <p>9 shares for specific ad tech products.</p> <p>10 Q To your knowledge, is this case the</p> <p>11 first time anyone has tried to assemble market</p> <p>12 share data using the term "open-web display</p> <p>13 advertising"?</p> <p>14 A I'm not quite sure what you mean by</p> <p>15 assemble data using a term. I understand what it</p> <p>16 means to assemble data restricted to a set of</p> <p>17 products with certain features.</p> <p>18 Q So let me explain.</p> <p>19 You have, in your reports, estimated</p> <p>20 market shares for markets where you're using the</p> <p>21 term "open-web display advertising," correct?</p> <p>22 A So as an economist, in my reports I'm</p>	<p style="text-align: right;">Page 45</p> <p>1 A These are publisher ad servers which are</p> <p>2 used to transact open-web display advertising.</p> <p>3 Q Is that a yes?</p> <p>4 A I'm sorry. What is your question?</p> <p>5 Q In your report, you estimate market</p> <p>6 shares for publisher ad servers for open-web</p> <p>7 display advertising, correct?</p> <p>8 A I do provide market shares for publisher</p> <p>9 ad servers that facilitate the transaction of</p> <p>10 open-web display advertising.</p> <p>11 Q And in your reports, you report market</p> <p>12 shares for ad exchanges for open-web display</p> <p>13 advertising, correct?</p> <p>14 A I do report market shares for ad</p> <p>15 exchanges that facilitate the sale of open-web</p> <p>16 display advertising.</p> <p>17 Q And in your, in your report, you report</p> <p>18 market shares for advertiser ad networks for</p> <p>19 open-web display advertising, correct?</p> <p>20 A In my report I do report market shares</p> <p>21 for --</p> <p>22 THE REPORTER: Hold on just a moment.</p>

<p style="text-align: right;">Page 46</p> <p>1 (Technical difficulties.)</p> <p>2 THE WITNESS: So in my report --</p> <p>3 BY MR. ISAACSON:</p> <p>4 Q I'll repeat the question.</p> <p>5 In your report, you report market shares</p> <p>6 for advertiser ad networks for open-web display</p> <p>7 advertising, correct?</p> <p>8 A I do compute market shares for</p> <p>9 advertiser ad networks that facilitate the sale of</p> <p>10 open-web display advertising.</p> <p>11 Q And to your knowledge, is this case the</p> <p>12 first time anyone has tried to compute market</p> <p>13 shares for markets referring to open-web display</p> <p>14 advertising?</p> <p>15 MR. NAKAMURA: Objection to form.</p> <p>16 THE WITNESS: So that's perhaps where</p> <p>17 I'm not understanding your question</p> <p>18 completely.</p> <p>19 I have seen market shares computed let's</p> <p>20 say by Google towards ad tech products</p> <p>21 looking at I think what they call</p> <p>22 "addressable inventory," but inventory from</p>	<p style="text-align: right;">Page 48</p> <p>1 shares.</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q So it is correct that you don't recall,</p> <p>4 anytime before this case, that anyone has tried to</p> <p>5 compute market shares for markets using the term</p> <p>6 open-web display advertising?</p> <p>7 MR. NAKAMURA: Objection to form.</p> <p>8 THE WITNESS: Again, I'm not quite</p> <p>9 sure -- I've seen shares computed for tools</p> <p>10 that transact open-web display advertising.</p> <p>11 BY MR. ISAACSON:</p> <p>12 Q Have you seen, anytime before this case,</p> <p>13 where someone has tried to compute market shares</p> <p>14 for markets where they use the term open-web</p> <p>15 display advertising?</p> <p>16 MR. NAKAMURA: Objection to form.</p> <p>17 THE WITNESS: Used -- again, if you're</p> <p>18 referring to a document which has the term</p> <p>19 open-web display advertising in which market</p> <p>20 shares are computed, as I noted before, I do</p> <p>21 not recall seeing a document that has market</p> <p>22 shares and those terms together, but I have</p>
<p style="text-align: right;">Page 47</p> <p>1 publishers on the web that don't use</p> <p>2 integrated ad tech tools. So those are</p> <p>3 shares computed by Google for open-web</p> <p>4 display advertising.</p> <p>5 BY MR. ISAACSON:</p> <p>6 Q So you believe you have seen -- so you</p> <p>7 say "addressable," but let me ask you -- I want to</p> <p>8 repeat the question, using the terms I'm using.</p> <p>9 Is this the -- is this case the first</p> <p>10 time anyone has tried to compute market shares for</p> <p>11 markets that use the term open-web display</p> <p>12 advertising?</p> <p>13 MR. NAKAMURA: Objection to form.</p> <p>14 THE WITNESS: I can't speak to what</p> <p>15 anyone has ever done.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q To your knowledge, is that true?</p> <p>18 MR. NAKAMURA: Objection to form.</p> <p>19 THE WITNESS: Again, I do not recall</p> <p>20 those third-party documents that use the term</p> <p>21 open-web display advertising, whether they</p> <p>22 had within them calculations of market</p>	<p style="text-align: right;">Page 49</p> <p>1 seen documents in which market share is</p> <p>2 computed for particular ad tech products that</p> <p>3 transact open-web display advertising.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q And those market share documents you</p> <p>6 see -- that you say you've seen that computed</p> <p>7 market shares for ad tech products that transact</p> <p>8 open-web display advertising, do those products</p> <p>9 also transact products -- I messed that up. I</p> <p>10 have to start over.</p> <p>11 You say you have seen documents in which</p> <p>12 market shares are computed for ad tech products</p> <p>13 that transact open-web display advertising.</p> <p>14 Have you seen market shares for ad tech</p> <p>15 products that transacted only open-web display</p> <p>16 advertising?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 THE WITNESS: Well, the market shares I</p> <p>19 compute also contain products that are able</p> <p>20 to transact display advertising for owned and</p> <p>21 operated properties. For example, many of</p> <p>22 Google's products can be used to access its</p>

<p style="text-align: right;">Page 50</p> <p>1 owned and operated inventory.</p> <p>2 I think I, I discuss this in my reports,</p> <p>3 how some products can be used to transact</p> <p>4 open-web inventory, while at the same time</p> <p>5 those products can be used to transact owned</p> <p>6 and operated or walled garden inventory.</p> <p>7 BY MR. ISAACSON:</p> <p>8 Q Have you seen market shares for ad tech</p> <p>9 products reported in this case where the</p> <p>10 transactions were limited to impressions or</p> <p>11 revenues for open-web display ads?</p> <p>12 MR. NAKAMURA: Objection to form.</p> <p>13 THE WITNESS: So in my report, again,</p> <p>14 there are -- I've seen Google documents that</p> <p>15 look at measures of share for DFP restricting</p> <p>16 attention to web display inventory that's not</p> <p>17 coming from walled garden publishers, and so</p> <p>18 that set of inventory overlaps with open-web.</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q Your definition of open-web display</p> <p>21 would exclude what you call walled gardens,</p> <p>22 correct?</p>	<p style="text-align: right;">Page 52</p> <p>1 sorry -- where we're restricting attention to</p> <p>2 transactions that aren't from walled gardens.</p> <p>3 So ad exchanges, demand-side platforms,</p> <p>4 other ad tech products offered by third</p> <p>5 parties aren't generally used to transact</p> <p>6 walled garden inventory, and so --</p> <p>7 THE REPORTER: You said "aren't"?</p> <p>8 THE WITNESS: Aren't used to transact</p> <p>9 walled garden inventory, so shares reported</p> <p>10 let's say by third parties for those products</p> <p>11 that do not transact walled garden inventory</p> <p>12 would be measured over inventory from</p> <p>13 open-web publishers, so that's where I'm</p> <p>14 having difficulty understanding your</p> <p>15 question.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q Ad exchanges, for example, do they</p> <p>18 engage in transactions limited to open-web display</p> <p>19 advertising as you have defined it?</p> <p>20 A So some ad exchanges, like AdX, can</p> <p>21 facilitate the sale of transactions from Google's</p> <p>22 owned and operated properties.</p>
<p style="text-align: right;">Page 51</p> <p>1 A So open-web, as I use the term in my</p> <p>2 report, refers to web publisher inventory that is</p> <p>3 not transacted through -- integrated or where the</p> <p>4 publisher owns these ad tech tools. I've seen</p> <p>5 various definitions of walled gardens, but I have</p> <p>6 seen one where it also refers to the presence of</p> <p>7 integrated ad tech tools as a characteristic.</p> <p>8 Q Have you seen market shares for ad tech</p> <p>9 products reported in this case for -- I'll start</p> <p>10 over.</p> <p>11 Have you seen market shares for ad tech</p> <p>12 products reported in this case where the</p> <p>13 transactions were limited to impressions or</p> <p>14 revenues for open-web display advertising as you</p> <p>15 have defined open-web display advertising?</p> <p>16 MR. NAKAMURA: Objection to form.</p> <p>17 THE WITNESS: So, for example, I believe</p> <p>18 I've seen documents describing shares of</p> <p>19 products like ad exchanges that are used to</p> <p>20 access open-web display inventory, and these</p> <p>21 ad exchanges are not -- where we're</p> <p>22 restricting transactions that aren't --</p>	<p style="text-align: right;">Page 53</p> <p>1 THE REPORTER: Can you slow down? "Like</p> <p>2 AdX, can facilitate the" --</p> <p>3 THE WITNESS: Sale of display</p> <p>4 advertising from Google's owned and operated</p> <p>5 properties.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q Does AdX also facilitate transactions on</p> <p>8 apps?</p> <p>9 A It's my understanding AdX does, so when</p> <p>10 I'm restricting attention to web inventory, AdX</p> <p>11 transacts open-web publisher inventory as well as</p> <p>12 Google owned and operated web inventory.</p> <p>13 Q So you would not consider AdX, for</p> <p>14 example, to be limited to transactions for</p> <p>15 open-web display advertising as you have defined</p> <p>16 it?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 THE WITNESS: So in my market, the</p> <p>19 markets I evaluate, the relevant criteria is</p> <p>20 whether the publisher ad server, the ad</p> <p>21 exchange or the advertiser ad network is able</p> <p>22 to facilitate the sale of open-web display</p>

<p style="text-align: right;">Page 54</p> <p>1 advertising.</p> <p>2 So AdX, it can do other things, but</p> <p>3 what's important is that it can sell open-web</p> <p>4 displays.</p> <p>5 BY MR. ISAACSON:</p> <p>6 Q That's not necessarily important to my</p> <p>7 question, all right?</p> <p>8 So I just wanted to know if AdX was</p> <p>9 limited to open-web display, and I believe you</p> <p>10 agree that it can do other things, so I want to go</p> <p>11 back to my question here.</p> <p>12 Have you seen any market shares for ad</p> <p>13 tech products that are limited to just open-web</p> <p>14 display advertising and don't include other</p> <p>15 things, other types of transactions that are also</p> <p>16 being done?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 THE WITNESS: So this is what I was</p> <p>19 discussing earlier.</p> <p>20 I recall seeing testimony and documents</p> <p>21 where they talk about shares for certain</p> <p>22 products like exchanges, and they -- I don't</p>	<p style="text-align: right;">Page 56</p> <p>1 107?</p> <p>2 MR. ISAACSON: Yes.</p> <p>3 BY MR. ISAACSON:</p> <p>4 Q There's a section on this page titled</p> <p>5 "Open-web display advertising is a distinct and</p> <p>6 important form of advertising for publishers and</p> <p>7 advertisers."</p> <p>8 The -- in paragraph 261, you say, "In</p> <p>9 this section, I discuss why open-web display</p> <p>10 advertising is a distinct and valuable form of</p> <p>11 advertising for open-web publishers and</p> <p>12 advertisers."</p> <p>13 You go on to say in the second sentence</p> <p>14 of paragraph 262, "open-web display advertising is</p> <p>15 distinct and valuable for open-web publishers and</p> <p>16 advertisers" -- and actually, more broadly, you</p> <p>17 say, "If open-web display advertising is distinct</p> <p>18 and valuable for open-web publishers and</p> <p>19 advertisers, then these customers would have</p> <p>20 limited ability to substitute away from products</p> <p>21 used to transact such advertising, if those</p> <p>22 products were priced higher than competitive</p>
<p style="text-align: right;">Page 55</p> <p>1 recall -- may be restricting attention to</p> <p>2 transactions from open-web publishers, so</p> <p>3 they're not counting transactions let's say</p> <p>4 through AdX that are coming from Google's</p> <p>5 owned and operated properties.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q Am I correct then that you don't recall</p> <p>8 any market shares reported for ad tech products</p> <p>9 that you have seen where the transactions were</p> <p>10 limited to open-web display advertising and did</p> <p>11 not include other types of transactions?</p> <p>12 MR. NAKAMURA: Objection to form.</p> <p>13 THE WITNESS: I think I've answered that</p> <p>14 question, and sitting here, I don't recall</p> <p>15 whether those calculations I was referring to</p> <p>16 earlier excluded owned and operated</p> <p>17 integrated transactions through products that</p> <p>18 could facilitate both.</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q If you could look at paragraph 262 of</p> <p>21 your opening report.</p> <p>22 MR. NAKAMURA: Counsel, is that page</p>	<p style="text-align: right;">Page 57</p> <p>1 levels."</p> <p>2 When you refer to "distinct and</p> <p>3 valuable," open-web display advertising being</p> <p>4 "distinct and valuable," is that the test you use</p> <p>5 to determine whether open-web display advertising</p> <p>6 was a substitute for other types of digital</p> <p>7 advertising?</p> <p>8 MR. NAKAMURA: Objection to form.</p> <p>9 THE WITNESS: So in the preamble, I'm</p> <p>10 not sure you read 262 correctly. You may</p> <p>11 have said a clause without the "if" prior to</p> <p>12 it. I just wanted to --</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q I did go back and read the "if," but</p> <p>15 yes, I agree it says "if."</p> <p>16 A You missed, you missed also the clause</p> <p>17 before it, which provides context for why we're</p> <p>18 talking about "if."</p> <p>19 The whole point here of this paragraph</p> <p>20 is to discuss differences between open-web display</p> <p>21 advertising and other forms of digital</p> <p>22 advertising, which then inform why tools such as</p>

<p style="text-align: right;">Page 58</p> <p>1 ad exchanges, advertiser ad networks, and</p> <p>2 publisher ad servers which transact this kind of</p> <p>3 advertising are valuable to customers and why they</p> <p>4 are relevant product markets.</p> <p>5 As I note throughout my reports, the</p> <p>6 relevant product markets do not include the</p> <p>7 underlying display advertisements themselves.</p> <p>8 Q All right. So you used these product</p> <p>9 differences to inform your analysis as to why</p> <p>10 open-web display advertising would be part of a</p> <p>11 relevant market; is that correct?</p> <p>12 A I didn't follow your --</p> <p>13 MR. NAKAMURA: Objection to form.</p> <p>14 THE WITNESS: I didn't follow your</p> <p>15 question.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q When you use the term "differences."</p> <p>18 The whole point of this paragraph is to discuss --</p> <p>19 you say "the whole point here of this paragraph is</p> <p>20 to discuss differences between open-web and other</p> <p>21 forms of digital advertising." You say that</p> <p>22 "which then informs why tools such as ad</p>	<p style="text-align: right;">Page 60</p> <p>1 entirety of paragraph 262, I explain --</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q Let's focus on my question.</p> <p>4 A -- what I am doing in this subsection of</p> <p>5 IV.B.</p> <p>6 Q What I would like to know is: Have you</p> <p>7 done an analysis of differences between open-web</p> <p>8 display advertising and other forms of digital</p> <p>9 advertising to help inform your relevant market</p> <p>10 analysis?</p> <p>11 MR. NAKAMURA: Objection to form.</p> <p>12 THE WITNESS: So I discuss in this</p> <p>13 subsection why open-web display advertising</p> <p>14 is a distinct and valuable form of</p> <p>15 advertising for open-web publishers and</p> <p>16 advertisers.</p> <p>17 The reason why that is useful is because</p> <p>18 it informs the extent to which customers,</p> <p>19 open-web publishers and advertisers, would be</p> <p>20 able to substitute away from products used to</p> <p>21 transact such advertising if those products</p> <p>22 were priced higher than competitive levels.</p>
<p style="text-align: right;">Page 59</p> <p>1 exchanges, advertiser ad networks, and publisher</p> <p>2 ad services which transact this kind of</p> <p>3 advertising are valuable to customer and why they</p> <p>4 are relevant markets."</p> <p>5 Am I correct that you are using product</p> <p>6 differences to inform your analysis as to why</p> <p>7 open-web display advertising would be part of a</p> <p>8 relevant ad tech market?</p> <p>9 A No, I --</p> <p>10 MR. NAKAMURA: Objection to form.</p> <p>11 THE WITNESS: I didn't follow that. I</p> <p>12 don't think that's what I said. I'm not</p> <p>13 using -- so let me take a step back.</p> <p>14 BY MR. ISAACSON:</p> <p>15 Q Well, let me ask a different question.</p> <p>16 A Sure.</p> <p>17 Q Have you done an analysis of differences</p> <p>18 between open-web display advertising and other</p> <p>19 forms of digital advertising to inform your</p> <p>20 relevant market analysis?</p> <p>21 MR. NAKAMURA: Objection to form.</p> <p>22 THE WITNESS: So if you read the</p>	<p style="text-align: right;">Page 61</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q So have you done an analysis of</p> <p>3 whether -- of how open-web, open-web display</p> <p>4 advertising is distinct and valuable to inform</p> <p>5 your analysis of substitutes in this case?</p> <p>6 A I think your term "analysis of</p> <p>7 substitutes" is vague.</p> <p>8 I have analyzed open-web display</p> <p>9 advertising, which is important to analyze; I have</p> <p>10 discussed why it is distinct and valuable compared</p> <p>11 to other forms of digital advertising; and I've</p> <p>12 also discussed why tools used to transact that</p> <p>13 kind of advertising are valuable for its</p> <p>14 customers.</p> <p>15 Hence, my opinion is that the relevant</p> <p>16 product markets I evaluate satisfy the</p> <p>17 hypothetical monopolist test and are valid.</p> <p>18 Q And so would you -- so am I correct that</p> <p>19 two products that are reasonable substitutes for</p> <p>20 one another can both be valuable?</p> <p>21 MR. NAKAMURA: Objection to form.</p> <p>22 THE WITNESS: I'm not quite sure I</p>

<p style="text-align: right;">Page 62</p> <p>1 follow your question.</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q I'll repeat it. Can two products that</p> <p>4 are reasonable substitutes for one another both be</p> <p>5 valid?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 THE WITNESS: What do you mean by</p> <p>8 "reasonable substitutes"?</p> <p>9 BY MR. ISAACSON:</p> <p>10 Q Reasonable substitutes within a market,</p> <p>11 within a market definition analysis.</p> <p>12 MR. NAKAMURA: Objection to form.</p> <p>13 THE WITNESS: So because of the</p> <p>14 imprecision of terms like "reasonable," I</p> <p>15 used the phrase "close substitutes," and by</p> <p>16 close substitutes, I mean are sufficiently</p> <p>17 close substitute alternatives to constrain</p> <p>18 the exercise of market power by a</p> <p>19 hypothetical monopolist.</p> <p>20 And what I'm -- my opinion is that</p> <p>21 publisher ad servers or advertiser ad</p> <p>22 networks or ad exchanges that facilitate the</p>	<p style="text-align: right;">Page 64</p> <p>1 delivers incremental value, delivers additional</p> <p>2 value, delivers distinct value, and hence,</p> <p>3 publisher customers that -- or advertiser</p> <p>4 customers that don't have access to ad tech tools</p> <p>5 which facilitate the sale of open-web display</p> <p>6 inventory would be giving up that incremental</p> <p>7 value.</p> <p>8 And this is why products that can</p> <p>9 facilitate the sale of open-web display</p> <p>10 advertising can possess -- if controlled by a</p> <p>11 single firm, a hypothetical monopolist, can</p> <p>12 possess significant market power, and so this is</p> <p>13 true for publisher ad servers, separately for ad</p> <p>14 exchanges, and separately for advertiser ad</p> <p>15 networks.</p> <p>16 Q So am I correct that if one product</p> <p>17 offers incremental value over another product, in</p> <p>18 your view, they won't be close substitutes?</p> <p>19 A I think it's important to consider</p> <p>20 magnitudes, consider the extent to which that</p> <p>21 incremental value is something that is not</p> <p>22 available from some other alternative. One would</p>
<p style="text-align: right;">Page 63</p> <p>1 sale of open-web display advertising, a</p> <p>2 hypothetical monopolist in each of those</p> <p>3 product markets would not be constrained by</p> <p>4 close enough substitutes outside of those</p> <p>5 relevant product markets.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q The -- can two products that are not</p> <p>8 close substitutes both be valuable?</p> <p>9 MR. NAKAMURA: Objection to form.</p> <p>10 THE WITNESS: I can derive value from a</p> <p>11 cup of water, and I can derive value from a</p> <p>12 car.</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q The -- does assess -- how does looking</p> <p>15 at whether a product is valuable show whether or</p> <p>16 not it is a close substitute?</p> <p>17 A So here I'm describing why customers</p> <p>18 value display advertising or open-web display</p> <p>19 advertising in addition to or over other</p> <p>20 alternative products.</p> <p>21 So as an economist, we would say these</p> <p>22 types of advertising, this type of advertising</p>	<p style="text-align: right;">Page 65</p> <p>1 also want to consider -- let me, let me I think</p> <p>2 pull back.</p> <p>3 You use the term "products" a lot, and I</p> <p>4 want to make sure that I'm distinguishing between</p> <p>5 the ad tech products -- DFP, AdX, Google Ads or</p> <p>6 advertiser ad exchanges, ad networks, advertiser</p> <p>7 ad networks and publisher ad servers --</p> <p>8 differently from digital advertising.</p> <p>9 So I'm not using products to refer to</p> <p>10 digital advertising or open-web display</p> <p>11 advertising. Just to be precise, I'm not going to</p> <p>12 use "products" when I'm referring to the</p> <p>13 underlying digital advertise bits. I'm going to</p> <p>14 keep "products" as something to refer to the ad</p> <p>15 tech tools at issue in this matter.</p> <p>16 Q All right, but in a market definition</p> <p>17 analysis, how do I -- if products have incremental</p> <p>18 value of a certain magnitude, you would say that</p> <p>19 they are not close substitutes; is that correct?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 THE WITNESS: I wouldn't necessarily</p> <p>22 conclude solely from one piece of evidence --</p>

<p style="text-align: right;">Page 66</p> <p>1 you know, my opinions regarding market</p> <p>2 definition are based on the totality of</p> <p>3 evidence that I present.</p> <p>4 I think a strong set of evidence that I</p> <p>5 discuss which supports the validity of the</p> <p>6 relevant product markets is Google's exercise</p> <p>7 of market power over its AdX, Google Ads and</p> <p>8 DFP product, right?</p> <p>9 So I'm looking at not just a single</p> <p>10 piece of evidence, but the totality of</p> <p>11 evidence to form my opinions regarding market</p> <p>12 definition.</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q If products have incremental value of a</p> <p>15 certain magnitude, you would consider that</p> <p>16 evidence that they are not close substitutes; is</p> <p>17 that correct?</p> <p>18 MR. NAKAMURA: Objection to form.</p> <p>19 THE WITNESS: I think that it is an</p> <p>20 important consideration whether or not a set</p> <p>21 of, here, digital advertisements provide</p> <p>22 distinct value over other forms of digital</p>	<p style="text-align: right;">Page 68</p> <p>1 differences between products can be evidence that</p> <p>2 two products are -- I'm doing a double negative</p> <p>3 now, so let me just ask you: In order for -- do</p> <p>4 you agree that incremental differences of a</p> <p>5 certain magnitude can be evidence that two</p> <p>6 products are not close substitutes?</p> <p>7 MR. NAKAMURA: Objection to form.</p> <p>8 THE WITNESS: I guess the question is</p> <p>9 imprecise. What do you, what do you mean</p> <p>10 by -- I think what I said before is examining</p> <p>11 whether, in this case, open-web display</p> <p>12 advertising has distinct incremental value</p> <p>13 over other forms of digital advertising is an</p> <p>14 important consideration in my analysis of</p> <p>15 whether the relevant product markets I</p> <p>16 evaluate are valid and pass the hypothetical</p> <p>17 monopolist test.</p> <p>18 BY MR. ISAACSON:</p> <p>19 Q And how do you determine whether</p> <p>20 something has -- two products have -- one product</p> <p>21 has distinct incremental value?</p> <p>22 A I think a large part of my report talks</p>
<p style="text-align: right;">Page 67</p> <p>1 advertising. I think that's important to</p> <p>2 understand, but when I get to market</p> <p>3 definition, I'll be focusing on the tools</p> <p>4 used to transact those digital</p> <p>5 advertisements, and there I will also</p> <p>6 consider the extent to which the underlying</p> <p>7 tools can be replaced with other</p> <p>8 alternatives.</p> <p>9 BY MR. ISAACSON:</p> <p>10 Q And as an economist, how would you look</p> <p>11 at -- how would you decide whether, what magnitude</p> <p>12 is necessary for -- I'll start that question over.</p> <p>13 In order for incremental differences to</p> <p>14 be evidence that two products are not close</p> <p>15 substitutes, how would you define the magnitude</p> <p>16 that's necessary of that difference?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 THE WITNESS: So the preamble to your</p> <p>19 question is not something that I stated or</p> <p>20 necessarily agree with.</p> <p>21 BY MR. ISAACSON:</p> <p>22 Q You don't agree that incremental</p>	<p style="text-align: right;">Page 69</p> <p>1 about reasons why open-web display advertising is</p> <p>2 an important form of monetization for -- let's</p> <p>3 focus on publishers.</p> <p>4 So for publishers, open-web display</p> <p>5 advertising is significant evidence that speaks to</p> <p>6 the value it has for helping them monetize their</p> <p>7 web inventory.</p> <p>8 Q How do I, how do I determine whether</p> <p>9 something, in your view, would have distinct</p> <p>10 incremental value? For example, does Coke have</p> <p>11 distinct incremental value over Pepsi?</p> <p>12 A Well, I'm not valuating soft drinks in</p> <p>13 this matter. What I'm doing is showing here, for</p> <p>14 the purpose of looking at ad tech products,</p> <p>15 publishers derive significant value, additional</p> <p>16 monetization from being able to sell their web</p> <p>17 inventory through display ads.</p> <p>18 And if they did not have access to those</p> <p>19 tools that allow them to sell display ads, they</p> <p>20 would be foregoing a significant amount of</p> <p>21 advertising revenue, which would likely lead to a</p> <p>22 reduction of content and investment.</p>

<p style="text-align: right;">Page 82</p> <p>1 my head, Figure 42 and Figure 43, which are from</p> <p>2 another document that also uses the term</p> <p>3 "addressable," but these are two documents, the</p> <p>4 ones from Figures 42 and 43 of my initial report,</p> <p>5 and this one you're showing me, that use</p> <p>6 "addressable."</p> <p>7 Q So when Exhibit 4 refers to "display web</p> <p>8 addressable inventory" in doing a market share</p> <p>9 calculation, this would be for the publisher ad</p> <p>10 server DoubleClick for Publishers, correct?</p> <p>11 A So this is referring to -- this 807</p> <p>12 figure is referring to Ad Manager.</p> <p>13 Q So I am correct?</p> <p>14 MR. NAKAMURA: Objection.</p> <p>15 BY MR. ISAACSON:</p> <p>16 Q Am I correct in my question?</p> <p>17 A So in my report I note that Google Ad</p> <p>18 Manager, GAM, is a term that Google uses to refer</p> <p>19 to DFP and AdX.</p> <p>20 Q So do you believe this is a market share</p> <p>21 for exchanges and publisher ad servers combined?</p> <p>22 A I am not saying it is a -- I think this</p>	<p style="text-align: right;">Page 84</p> <p>1 A I consider it to be a share of some</p> <p>2 metric of addressable inventory, display web</p> <p>3 addressable inventory.</p> <p>4 Q So you don't consider this to be a</p> <p>5 market share calculation; is that correct?</p> <p>6 A So in my report I show that -- or I</p> <p>7 state that "multiple Google documents since 2018</p> <p>8 estimate DFP's market share" --</p> <p>9 Q I'm asking you, sir --</p> <p>10 A -- "across various measures."</p> <p>11 Q -- this document. This document. Just</p> <p>12 this document. We can talk about other documents</p> <p>13 later. Do you consider this document on this</p> <p>14 page, 803, to be a market share calculation?</p> <p>15 A As I was saying, when I reference "this</p> <p>16 document," I note that Google documents, including</p> <p>17 this one, estimate DFP's market share across</p> <p>18 various measures, so this is a share of a</p> <p>19 particular measure.</p> <p>20 Q Do you consider it to be -- this</p> <p>21 document, page 807, to be a market share measure?</p> <p>22 A It is a share of a measure that DFP or</p>
<p style="text-align: right;">Page 83</p> <p>1 is a measure of share over some metric, where it</p> <p>2 says "85 percent of display web addressable</p> <p>3 inventory flowing through" Ad Manager.</p> <p>4 Q So do you know what share is being</p> <p>5 discussed here?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 MR. ISAACSON: What's the objection?</p> <p>8 MR. NAKAMURA: The objection is what</p> <p>9 share of what? Vague.</p> <p>10 MR. ISAACSON: The question is "so do</p> <p>11 you know what share is being discussed here."</p> <p>12 MR. NAKAMURA: Yes. Share of what?</p> <p>13 Vague, anyway.</p> <p>14 BY MR. ISAACSON:</p> <p>15 Q Do you know what market share is being</p> <p>16 discussed in this document?</p> <p>17 A So I'm -- when I reference this document</p> <p>18 in my report, or this page, I note that it states</p> <p>19 85 percent of display web addressable inventory</p> <p>20 flows through Ad Manager.</p> <p>21 Q Do you consider that to be a market</p> <p>22 share calculation?</p>	<p style="text-align: right;">Page 85</p> <p>1 in GAM represents, so it is a -- GAM, G-A-M.</p> <p>2 Q I've asked -- I'm asking you multiple</p> <p>3 times if you consider this to be a market share</p> <p>4 measure, and you're responding you consider it to</p> <p>5 be a measure, so I don't know if you're answering</p> <p>6 my question yes or no.</p> <p>7 A I, I say this is a document that reports</p> <p>8 DFP's market -- or presents a measure of DFP's</p> <p>9 market share.</p> <p>10 Q Okay. So you do consider this page a</p> <p>11 measure of DFP's market share, and what market is</p> <p>12 being -- what market is being discussed here?</p> <p>13 A It's discussing, as I'm interpreting it,</p> <p>14 discussing 85 of addressable display web inventory</p> <p>15 flowing through --</p> <p>16 THE REPORTER: Discussing what? I'm</p> <p>17 sorry.</p> <p>18 THE WITNESS: 85 percent of display web</p> <p>19 addressable inventory flowing through GAM,</p> <p>20 which includes DFP.</p> <p>21 BY MR. ISAACSON:</p> <p>22 Q Is this document on this page addressing</p>

<p style="text-align: right;">Page 86</p> <p>1 a market share for publisher ad servers?</p> <p>2 A So in the rest of my -- elsewhere in my</p> <p>3 report, I note that display web -- sorry --</p> <p>4 open-web publishers tend to use one publisher ad</p> <p>5 server for their display advertising needs, and if</p> <p>6 GAM and DFP represents 85 percent of display web</p> <p>7 addressable inventory, that is its share of</p> <p>8 display web addressable inventory that goes</p> <p>9 through publisher ad servers.</p> <p>10 Q I'm going to ask my question again to</p> <p>11 see if I can get you to answer.</p> <p>12 Is this document on this page discussing</p> <p>13 a market share for publisher ad servers?</p> <p>14 A I'm presenting it as something that</p> <p>15 represents one measure of a market share of DFP</p> <p>16 within publisher ad servers.</p> <p>17 Q And the market share calculation that's</p> <p>18 being done here includes revenue for apps,</p> <p>19 correct?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 Foundation.</p> <p>22 THE WITNESS: Can you repeat your</p>	<p style="text-align: right;">Page 88</p> <p>1 limited to open-web display advertising?</p> <p>2 MR. NAKAMURA: Objection to form.</p> <p>3 THE WITNESS: In my report I am noting</p> <p>4 that this slide says 85 percent of display</p> <p>5 web addressable inventory flows through GAM,</p> <p>6 and this is one of many other documents that</p> <p>7 I --</p> <p>8 BY MR. ISAACSON:</p> <p>9 Q I'm not asking you about --</p> <p>10 A -- discuss Google's reports, and I also</p> <p>11 calculate, using data.</p> <p>12 Q I move to strike the discussion about</p> <p>13 documents. We're just -- I'm just trying to get</p> <p>14 through this page with you, sir, okay, and your</p> <p>15 understanding of it.</p> <p>16 The revenue flowing through GAM that's</p> <p>17 addressed in this document includes revenue</p> <p>18 related to apps, correct?</p> <p>19 MR. NAKAMURA: Objection to form.</p> <p>20 THE WITNESS: This page here does not</p> <p>21 provide enough information to determine</p> <p>22 whether the 85 percent of display web</p>
<p style="text-align: right;">Page 87</p> <p>1 question?</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q Sure.</p> <p>4 Do you see -- look at the, look at the</p> <p>5 diagram there. Do you see it's measuring market</p> <p>6 share based on "\$24 Billion Revenue Under</p> <p>7 Management"?</p> <p>8 A I don't know if that's the basis on the</p> <p>9 market share that's in the sentence above it.</p> <p>10 Q Well, look at the notes below. Do you</p> <p>11 see it begins with "\$24 Billion"?</p> <p>12 A I do see a "\$24 Billion Revenue Under</p> <p>13 Management" sentence.</p> <p>14 Q And do you see on the chart the</p> <p>15 reference to "apps" in the upper right-hand</p> <p>16 corner?</p> <p>17 A I do see that there are apps in the</p> <p>18 figure.</p> <p>19 Q And do you see it also includes search?</p> <p>20 A I see the figure reports -- has the word</p> <p>21 "search."</p> <p>22 Q Do you know if the calculations here are</p>	<p style="text-align: right;">Page 89</p> <p>1 addressable inventory includes apps.</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q And the app, revenue from apps would not</p> <p>4 be included in your market definition of publisher</p> <p>5 ad servers, correct?</p> <p>6 A Can you repeat your question?</p> <p>7 Q Revenue from apps would not be included</p> <p>8 in your market definition of publisher ad servers,</p> <p>9 correct?</p> <p>10 A So I don't understand the question.</p> <p>11 Q When you define open-web display for</p> <p>12 your market definition, you exclude apps, correct?</p> <p>13 A So I think it's important to understand</p> <p>14 what my relevant product markets are. They are</p> <p>15 publisher -- so for publisher ad servers, they are</p> <p>16 products that are publisher ad servers which can</p> <p>17 facilitate the sale of open-web display</p> <p>18 advertising.</p> <p>19 Some of those products, including, as</p> <p>20 you noted, DFP, can transact other forms of</p> <p>21 digital advertising. Those products are not</p> <p>22 excluded just because they can transact other</p>

<p style="text-align: right;">Page 90</p> <p>1 forms of digital advertising. So that's what I</p> <p>2 mean by I don't follow your question.</p> <p>3 Q So when you define a market for</p> <p>4 publisher ad servers for open-web display</p> <p>5 advertising, that would include transactions on</p> <p>6 those publisher ad servers for -- that are not</p> <p>7 open-web display advertising; am I correct?</p> <p>8 A I think your question is imprecise.</p> <p>9 Again, the relevant product market --</p> <p>10 Q It's my question, sir, so you're going</p> <p>11 to have to deal with it here.</p> <p>12 The -- when you define a market for</p> <p>13 publisher ad servers for open-web display</p> <p>14 advertising, you are not limiting that market to</p> <p>15 transactions for open-web display advertising; is</p> <p>16 that correct?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 THE WITNESS: So the relevant product</p> <p>19 markets that I evaluate in this case are not</p> <p>20 comprised of transactions.</p> <p>21 BY MR. ISAACSON:</p> <p>22 Q I'm just asking you about publisher ad</p>	<p style="text-align: right;">Page 92</p> <p>1 you mean by that.</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q When you measure market share for the</p> <p>4 market for publisher ad servers with -- for</p> <p>5 open-web display advertising, when you measure</p> <p>6 those shares, do you limit yourself to</p> <p>7 transactions involving open-web display</p> <p>8 advertising?</p> <p>9 A So I provide different measures of</p> <p>10 market shares, using the data produced in this</p> <p>11 case. In some of those calculations, I compute</p> <p>12 market shares for publisher ad servers over</p> <p>13 open-web display transactions, as that informs the</p> <p>14 extent to which DFP or a hypothetical monopolist</p> <p>15 of publisher ad servers would be able to exercise</p> <p>16 market power.</p> <p>17 Q You expressed an opinion in this case</p> <p>18 that publisher ad servers for all transactions</p> <p>19 being on those ad servers are a relevant market?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 THE WITNESS: So my opinion is that</p> <p>22 publisher ad servers that can be used to</p>
<p style="text-align: right;">Page 91</p> <p>1 servers at this point. We're starting with one</p> <p>2 market, all right? The -- when you define a</p> <p>3 market for publisher ad servers for open-web</p> <p>4 display advertising, you are not limiting that</p> <p>5 market to transactions on those publisher ad</p> <p>6 servers for open-web display advertising; is that</p> <p>7 correct?</p> <p>8 A So again, I don't --</p> <p>9 MR. NAKAMURA: Objection to form.</p> <p>10 THE WITNESS: -- follow the --</p> <p>11 THE REPORTER: I'm sorry. Was there an</p> <p>12 objection?</p> <p>13 MR. NAKAMURA: Objection to form.</p> <p>14 THE REPORTER: Okay. So what?</p> <p>15 THE WITNESS: Again, I don't follow the</p> <p>16 question, because, as I noted, the relevant</p> <p>17 product markets contain, in this case,</p> <p>18 publisher ad servers, right, which were these</p> <p>19 ad tech tools. The relevant product markets</p> <p>20 are not comprised of transactions, so when</p> <p>21 you say transactions are in or out of a</p> <p>22 relevant product market, I don't follow what</p>	<p style="text-align: right;">Page 93</p> <p>1 facilitate the sale of open-web display</p> <p>2 advertising is a relevant product market.</p> <p>3 BY MR. ISAACSON:</p> <p>4 Q Is it your opinion -- are you expressing</p> <p>5 an opinion in this case that publisher ad servers</p> <p>6 that can facilitate the sale of open-web display</p> <p>7 advertising, as well as other transactions, are a</p> <p>8 relevant market?</p> <p>9 MR. NAKAMURA: Objection to form.</p> <p>10 THE WITNESS: I think it overlaps the --</p> <p>11 the relevant criteria for whether a product</p> <p>12 is included in the publisher ad server</p> <p>13 product market that I evaluate is whether it</p> <p>14 is able to facilitate the sale of open-web</p> <p>15 display transactions.</p> <p>16 Those publisher ad servers within this</p> <p>17 market may also be able to transact other</p> <p>18 forms of digital advertising. DFP is an</p> <p>19 example of a publisher ad server that is in</p> <p>20 the relevant product market comprising</p> <p>21 publisher ad servers, and it can facilitate</p> <p>22 the sale of other types of digital</p>

<p style="text-align: right;">Page 94</p> <p>1 advertising.</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q So for your publisher ad server market,</p> <p>4 the product in that market are publisher ad</p> <p>5 servers that can facilitate open-web display</p> <p>6 advertising even if they can, even if they can</p> <p>7 facilitate other transactions; is that right?</p> <p>8 A So the ability to transact other types</p> <p>9 of transactions is not disqualifying for a product</p> <p>10 to be contained within the publisher ad server</p> <p>11 market. The necessary criteria is whether it is</p> <p>12 able to facilitate the sale of both --</p> <p>13 (indecipherable) -- elsewhere, indirect and direct</p> <p>14 transactions for open-web display advertising.</p> <p>15 Q Do -- and so the products in the, in</p> <p>16 your publisher ad server market, for example,</p> <p>17 would include publisher ad servers that facilitate</p> <p>18 open-web display transactions as well as</p> <p>19 advertising transactions on apps; is that correct?</p> <p>20 A So DFP, for example, can serve both web</p> <p>21 display and app display, to my understanding, and</p> <p>22 DFP is a product contained in the publisher ad</p>	<p style="text-align: right;">Page 96</p> <p>1 So am I correct that DFP competes with</p> <p>2 publisher ad servers that facilitate advertising</p> <p>3 on apps?</p> <p>4 THE REPORTER: On apps, you said?</p> <p>5 MR. NAKAMURA: Objection to form.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q Like an app.</p> <p>8 A Is there an example of a publisher ad</p> <p>9 server you have in mind that cannot facilitate --</p> <p>10 Q I just want you to answer the question,</p> <p>11 sir.</p> <p>12 Am I correct the DFP would compete with</p> <p>13 a publisher ad server that facilitates advertising</p> <p>14 on apps?</p> <p>15 MR. NAKAMURA: Objection to form.</p> <p>16 THE WITNESS: I think in your</p> <p>17 hypothetical, I'm trying to understand more</p> <p>18 about the details to, to answer the question.</p> <p>19 So one is: Is there an example of one that</p> <p>20 you can think of so I can ground my answer in</p> <p>21 specifics?</p> <p>22</p>
<p style="text-align: right;">Page 95</p> <p>1 server market.</p> <p>2 Q And would you agree with me that DFP</p> <p>3 competes with other publisher ad servers that</p> <p>4 facilitate advertising, advertising transactions</p> <p>5 on apps?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 THE WITNESS: So I think there is, for</p> <p>8 example, like DFP and AdMob, which is a</p> <p>9 Google product -- AdMob, A-D-M-O-B -- are</p> <p>10 Google products, and I believe that there is</p> <p>11 publisher substitution between the two.</p> <p>12 For the purpose of market definition,</p> <p>13 the relevant question is the extent to which</p> <p>14 publisher ad servers that can only facilitate</p> <p>15 the sale of app display and not web display</p> <p>16 constrain a hypothetical monopolist of</p> <p>17 publisher ad servers that are able to</p> <p>18 transact open-web display advertising.</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q I didn't ask you about the purpose of</p> <p>21 market definition, so I'll move to strike the</p> <p>22 answer from that point afterwards.</p>	<p style="text-align: right;">Page 97</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q Are you able to answer the question</p> <p>3 whether DFP would compete with a publisher ad</p> <p>4 server that facilitates advertising on apps?</p> <p>5 MR. NAKAMURA: Objection to form.</p> <p>6 THE WITNESS: So there is some degree --</p> <p>7 I think I answered before -- of publisher</p> <p>8 substitution between let's say AdMob and DFP,</p> <p>9 but it's my opinion that such substitution</p> <p>10 between app-only publisher ad servers and</p> <p>11 those that can facilitate the sale of</p> <p>12 open-web display is insufficient to constrain</p> <p>13 the exercise of market power by a</p> <p>14 hypothetical monopolist of publisher ad</p> <p>15 servers.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q And you've answered the question by</p> <p>18 referring to substitution, and not everybody is</p> <p>19 going to understand what you're talking about when</p> <p>20 I say "do they compete." So for those who</p> <p>21 don't -- who aren't in your field, are you able --</p> <p>22 can you answer the question whether DoubleClick</p>

<p style="text-align: right;">Page 98</p> <p>1 for Publishers would compete with an ad -- with a 2 publisher ad server that facilitates advertising 3 on an app? 4 MR. NAKAMURA: Objection to form. 5 THE WITNESS: So as an economist, when 6 you say "compete," I, I'm answering 7 interpreting that as the extent to which 8 there is substitution by some set of 9 customers so that a firm, by adjusting its 10 actions, can earn more business perhaps from 11 that, that rival. 12 Under that definition, there is some 13 substitution. Potentially, you know, you 14 have an app-only server like potentially 15 AdMob, but substitution, it's my opinion, 16 would not be sufficient to invalidate a 17 publisher ad server product market. 18 BY MR. ISAACSON: 19 Q The -- for the, for the ad exchange 20 market that you have defined, are the products in 21 the ad exchange market that you have defined, do 22 those include exchanges that facilitate open-web</p>	<p style="text-align: right;">Page 100</p> <p>1 advertising it can facilitate; would you agree 2 with that? 3 A I think it very much depends on the 4 customer. A publisher that does not have, for 5 example, an app, it only has web and doesn't own 6 its own integrated ad tech tools, would likely 7 weigh more heavily or primarily consider an 8 exchange's ability to transact web display, as 9 that is what is relevant for that publisher 10 customer. 11 Q Do you agree a publisher customer of an 12 exchange that has both an app and a website would 13 evaluate the exchange based on its ability to 14 facilitate both types of transactions, open-web 15 display and apps? 16 A Sorry. I didn't follow, I didn't follow 17 your question. You said an exchange that has a 18 website and an app? 19 Q Yeah, I misspoke. 20 Do you agree, do you agree that 21 publishers, in evaluating exchanges that have 22 both -- that facilitate both transactions on</p>
<p style="text-align: right;">Page 99</p> <p>1 display advertising as well as advertising that's 2 not open-web display advertising? 3 A So some of the participants within the 4 ad exchange product market that I evaluate can 5 transact other forms of digital advertising than 6 open-web display. For example, AdX, as we 7 discussed earlier, can transact display inventory 8 from Google's owned and operated properties. 9 Q AdX can also facilitate transactions, 10 advertising transactions on apps, correct? 11 A That is my understanding. 12 Q The -- and so the products in your ad 13 exchange market, for example, would be -- would 14 include exchanges that facilitate advertising 15 transactions both on open-web display advertising 16 and on advertising on apps, correct? 17 A So I think we established that AdX is 18 within the ad exchange product market, and AdX, to 19 my understanding, can transact both open-web 20 display as well as app display advertising. 21 Q And a customer of an exchange would 22 evaluate an exchange on the total amount of</p>	<p style="text-align: right;">Page 101</p> <p>1 open-web display and on apps would evaluate the 2 exchange based on their ability to facilitate both 3 types of transactions? 4 A It is my recollection that -- and I 5 think I discuss this in my report, that publishers 6 are able to split up different forms of digital 7 inventory across different products, for 8 example -- I provided an example of Disney that 9 has a separate integrated publisher ad server for 10 its in-stream video advertisements and uses DFP 11 for its web display advertising. 12 So in that case, I believe Disney 13 evaluated an ad tech product based on its ability 14 to transact display, even though that same 15 publisher had other types of digital inventory to 16 monetize. 17 Q Going to your point that ad exchanges 18 also facilitate advertising on connected TV, 19 correct? 20 MR. NAKAMURA: Objection to form. 21 THE WITNESS: I believe there exist ad 22 exchanges that can serve connected TV digital</p>

<p style="text-align: right;">Page 102</p> <p>1 advertising.</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q And there are ad exchanges, like AdX,</p> <p>4 that facilitate advertising transactions on -- for</p> <p>5 display ads, for ads on apps, and for connected</p> <p>6 TV, correct?</p> <p>7 MR. NAKAMURA: Objection to form.</p> <p>8 THE WITNESS: I don't know. I, just</p> <p>9 sitting here today, don't recall AdX's</p> <p>10 connective TV functionalities. I noted</p> <p>11 before that publishers often use multiple ad</p> <p>12 exchanges, and there's, as I noted, evidence</p> <p>13 that publishers can split various digital</p> <p>14 inventory they have across different ad tech</p> <p>15 products.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q Am I correct that you -- well, you've</p> <p>18 been studying the ad exchanges since what; since</p> <p>19 fall of 2019? Is that right?</p> <p>20 A I started working on this matter in the</p> <p>21 fall of 2019.</p> <p>22 Q And today do you have an understanding</p>	<p style="text-align: right;">Page 104</p> <p>1 ad exchanges?</p> <p>2 A So I know that in my rebuttal report, I</p> <p>3 present a slide from a 2019 presentation from</p> <p>4 Google to the DOJ, indicating that their DSP</p> <p>5 supports over 80 exchanges at the time.</p> <p>6 Q The -- and when you say you've been</p> <p>7 talking -- your just, you know, previous answers</p> <p>8 were referring to ad exchanges with low market</p> <p>9 share. Those are low market shares -- are those</p> <p>10 low market shares for a market for open-web</p> <p>11 display advertising?</p> <p>12 A So again, I don't have a market for</p> <p>13 transactions that I evaluate. That share that I</p> <p>14 reported earlier represents the share of indirect,</p> <p>15 in that case, I believe worldwide open-web display</p> <p>16 transactions that go through ad exchanges.</p> <p>17 Q The -- do you know how many exchanges or</p> <p>18 what proportion of exchanges will facilitate</p> <p>19 transactions for open-web display advertising and</p> <p>20 advertising on apps?</p> <p>21 A So I don't have the -- sitting here</p> <p>22 today, I do not recall the precise number.</p>
<p style="text-align: right;">Page 103</p> <p>1 of approximately how many ad exchanges there are?</p> <p>2 A So, by far, the largest ad exchange for</p> <p>3 open-web display inventory is AdX. There are --</p> <p>4 let me go to my report. There are approximately</p> <p>5 four or five others with shares greater than one</p> <p>6 or two percent that I --</p> <p>7 Q Listen to my question.</p> <p>8 A -- reported.</p> <p>9 Q My question was: How many ad exchanges</p> <p>10 are there? I didn't ask about shares or size. Do</p> <p>11 you know how many ad exchanges there are?</p> <p>12 A I was trying to answer the question.</p> <p>13 Q Why don't you get to the answer. I'm</p> <p>14 sorry for interrupting you, but my question is</p> <p>15 simple. Do you know how many ad exchanges there</p> <p>16 are, approximately?</p> <p>17 A I know there are approximately five that</p> <p>18 produce data with a market share in '22 above one,</p> <p>19 one percent, and there may be some others with</p> <p>20 less than that. I don't have a precise number of</p> <p>21 the number of exchanges with very low shares.</p> <p>22 Q Do you know if there are more than 100</p>	<p style="text-align: right;">Page 105</p> <p>1 Q Do you know if there's any ad exchange</p> <p>2 that facilitates advertising only for open-web</p> <p>3 display advertising?</p> <p>4 A Sitting here today, I can't name a</p> <p>5 specific one that I know definitively does not</p> <p>6 transact other forms of digital advertising than</p> <p>7 open-web display.</p> <p>8 Q And when you defined market shares for</p> <p>9 the, for the exchange market in this case, whether</p> <p>10 on impressions or on a revenue basis, you have</p> <p>11 done that looking at transactions for open-web</p> <p>12 display ads, correct?</p> <p>13 A I don't know what you mean by "defined</p> <p>14 market shares."</p> <p>15 Q When you estimated the market shares.</p> <p>16 A And so can you repeat your question,</p> <p>17 please.</p> <p>18 Q Would you have estimated market shares</p> <p>19 for the exchange market in this case, you have</p> <p>20 done that based on impressions or revenues for</p> <p>21 transactions for open-web display advertising,</p> <p>22 correct?</p>

<p style="text-align: right;">Page 106</p> <p>1 A I computed market shares for ad 2 exchanges over indirect open-web display 3 impressions to inform my analysis of market power 4 in the ad exchange market. 5 Q So you're -- to be clear -- and let's, 6 let's look at paragraph 7 of your report. 7 A Which report? 8 Q Your opening report, what we looked at 9 before. 10 In here we were looking at before, you 11 were going to "determine whether publisher ad 12 servers, ad exchanges, and advertiser ad networks 13 for open-web display advertising" were relevant 14 markets. 15 When it says "for open-web display 16 advertising," to be more precise, what you mean is 17 that they can facilitate open-web display 18 advertising, correct? 19 MR. NAKAMURA: Objection to form. 20 THE WITNESS: So the modifier "for 21 open-web display advertising," when applied 22 to these three products, refers to the</p>	<p style="text-align: right;">Page 108</p> <p>1 advertising curtailed, as you noted, and 2 Google Ads, which is -- when I use Google 3 Ads, I'm referring to the advertiser-facing 4 component of the Google Display Network. 5 BY MR. ISAACSON: 6 Q So are there other advertiser networks 7 in your market that you didn't use for market 8 shares because they didn't provide data? 9 MR. NAKAMURA: Objection to form. 10 THE WITNESS: So I am not aware of 11 another bidding tool that's specifically an 12 advertiser ad network. However, to be 13 conservative in my initial report, I 14 computed -- I computed market shares for 15 advertiser networks that included the 16 possibility that other bidding tools that did 17 not produce data were advertiser ad networks. 18 BY MR. ISAACSON: 19 Q I'm not asking you how you're 20 conservative. I'm just talking about your 21 definition of advertiser ad networks. 22 Did you investigate whether there were</p>
<p style="text-align: right;">Page 107</p> <p>1 ability to transact open-web display 2 advertising. 3 BY MR. ISAACSON: 4 Q And, and then for advertiser ad 5 networks, there's only three advertiser ad 6 networks in your relevant market there, right? 7 MR. NAKAMURA: Objection to form. 8 THE WITNESS: There are three advertiser 9 ad networks I provided data for the use of 10 computing market shares, and they are the 11 three that I analyze in this relevant product 12 market. 13 BY MR. ISAACSON: 14 Q That would be essentially referred to as 15 FAN, Criteo, and Google, correct? 16 MR. NAKAMURA: Objection to form. 17 THE WITNESS: So FAN was a product in 18 the advertiser ad network product market for 19 open-web display advertising until 20 approximately 2020, at which point it exited 21 or no longer -- still present elsewhere, but 22 it no longer transacts open-web display</p>	<p style="text-align: right;">Page 109</p> <p>1 other advertiser ad networks other than the three 2 for which you had data? 3 A I did look into that. 4 Q Did you determine there were no other 5 advertiser ad networks? 6 A So I did -- just sitting here today, 7 there are other advertiser ad networks, but many 8 of them are of these transacted owned and operated 9 inventory, so the extent to which they transacted 10 open-web display inventory, did not have data on 11 that, which is why I performed additional 12 robustness tests to allow for the possibility that 13 other bidding tools would be included in the 14 advertiser ad network market. 15 Q When I'm asking you these questions, 16 sir, I'm not asking you about other things you 17 did. This goes faster if we just answer the 18 question. 19 The -- who are the other advertiser ad 20 networks you identified but did not have data on 21 open-web display inventory? 22 A Sitting here today, I don't recall the</p>

<p style="text-align: right;">Page 110</p> <p>1 specific one I -- oh, wait. Hold on one second.</p> <p>2 So I looked at Microsoft Audience</p> <p>3 Network as well as Yahoo. Here, I noted that they</p> <p>4 appear to focus primarily on native ads as well as</p> <p>5 owned and operated. So there are other networks</p> <p>6 that I was discussing before that I examined and</p> <p>7 looked into.</p> <p>8 Q And they did not provide you data on</p> <p>9 open-web display, so you didn't include them in</p> <p>10 the market share, correct?</p> <p>11 MR. NAKAMURA: Objection to form.</p> <p>12 THE WITNESS: So sitting here today, I</p> <p>13 don't recall -- some of these networks may</p> <p>14 have provided data, but none of the</p> <p>15 transactions were identified as display, and</p> <p>16 so then in those instances they would not</p> <p>17 have been included in market share</p> <p>18 transactions restricted to open-web display.</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q Had you heard the term "advertiser ad</p> <p>21 network" before your work on this case?</p> <p>22 A I don't, I don't remember. I do</p>	<p style="text-align: right;">Page 112</p> <p>1 internal name that Facebook used for its ad tech</p> <p>2 product that sold on apps, but Facebook offered ad</p> <p>3 tech tools that advertisers could use to advertise</p> <p>4 on this application, as well as for the period of</p> <p>5 time when those were present open-web, on</p> <p>6 open-web.</p> <p>7 Q And when Facebook moved to just</p> <p>8 facilitating through an ad network transactions to</p> <p>9 advertising on apps, including -- well, let me,</p> <p>10 let me be specific. I'll back up here.</p> <p>11 During that -- when Facebook was</p> <p>12 facilitating advertising transactions on apps,</p> <p>13 that included third-party apps, correct?</p> <p>14 MR. NAKAMURA: Objection to form.</p> <p>15 THE WITNESS: I can't recall. I don't</p> <p>16 recall.</p> <p>17 BY MR. ISAACSON:</p> <p>18 Q So you don't know today whether the</p> <p>19 Facebook advertiser ad network, as you call it, in</p> <p>20 your market share facilitated both open-web</p> <p>21 display advertising, advertising on Facebook as</p> <p>22 well as advertising on third-party apps?</p>
<p style="text-align: right;">Page 111</p> <p>1 remember hearing "ad networks" before. I can't</p> <p>2 give you, you know, a certain answer whether or</p> <p>3 I'd not or had heard "advertiser ad networks"</p> <p>4 before.</p> <p>5 Q Right. You said that FAN stopped</p> <p>6 facilitating open-web display advertising, and</p> <p>7 then -- but was still operating. That's generally</p> <p>8 right?</p> <p>9 A So I believe -- so there is a product</p> <p>10 known as Meta Ads, previously Facebook Ads, which</p> <p>11 advertisers can use to purchase owned and operated</p> <p>12 Facebook inventory.</p> <p>13 Q And can they -- is there also -- can</p> <p>14 they also purchase on apps?</p> <p>15 A It's my understanding that the Facebook</p> <p>16 product allows advertisers to purchase on the</p> <p>17 Facebook apps like Instagram and Facebook.</p> <p>18 Q And during the time that FAN was</p> <p>19 included in your market share calculations, was</p> <p>20 FAN facilitating advertising both on open-web</p> <p>21 display and on apps?</p> <p>22 A I can't speak for certainty on the</p>	<p style="text-align: right;">Page 113</p> <p>1 A During --</p> <p>2 MR. NAKAMURA: Objection to form.</p> <p>3 THE WITNESS: During what period of</p> <p>4 time?</p> <p>5 BY MR. ISAACSON:</p> <p>6 Q During the period of time when you were</p> <p>7 including them in your market share selections.</p> <p>8 MR. NAKAMURA: Same objection.</p> <p>9 THE WITNESS: So as I noted, like so</p> <p>10 prior to 2020, I do not know for certain the</p> <p>11 ability of Facebook's ad tech tools to</p> <p>12 transact on third-party applications.</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q Do you know for the time period after</p> <p>15 you removed Facebook from your market share</p> <p>16 calculations, whether Facebook was still</p> <p>17 facilitating advertising transactions on</p> <p>18 third-party apps?</p> <p>19 MR. NAKAMURA: Objection to form.</p> <p>20 THE WITNESS: So I don't think I removed</p> <p>21 Facebook necessarily. It's using the data</p> <p>22 from Facebook, and if there's a zero, for</p>

<p style="text-align: right;">Page 114</p> <p>1 example, then it would be there, but it</p> <p>2 wouldn't show up.</p> <p>3 (Reporter clarification.)</p> <p>4 THE WITNESS: So if there's a zero, the</p> <p>5 data would be used but would not show up as a</p> <p>6 positive share.</p> <p>7 Setting that aside, I apologize. I</p> <p>8 forgot your question. If you can repeat it,</p> <p>9 please.</p> <p>10 BY MR. ISAACSON:</p> <p>11 Q Do you know for the time period after</p> <p>12 Facebook was no longer part of your estimating,</p> <p>13 estimation of market share calculations for</p> <p>14 advertiser ad networks, whether Facebook was still</p> <p>15 facilitating advertising transactions on</p> <p>16 third-party apps?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 THE WITNESS: So I'm not certain on</p> <p>19 Facebook's ability to transact display</p> <p>20 inventory on third-party apps.</p> <p>21 BY MR. ISAACSON:</p> <p>22 Q When you estimate market shares for</p>	<p style="text-align: right;">Page 116</p> <p>1 products -- let me start over.</p> <p>2 I'm trying to understand, now that</p> <p>3 you're talking about facilitating transactions, so</p> <p>4 for the exchange market that facilitates open-web</p> <p>5 display advertising, you have not looked at how</p> <p>6 those exchanges compete with respect to</p> <p>7 transactions that would include apps, connected</p> <p>8 TV, or otherwise non-open-web display advertising,</p> <p>9 correct?</p> <p>10 MR. NAKAMURA: Objection to form.</p> <p>11 THE WITNESS: So I have -- I believe I</p> <p>12 have looked at dimensions of competition for</p> <p>13 non-open-web display inventory across</p> <p>14 exchanges in my analysis. I think I've noted</p> <p>15 the, for example, the ability of ad tech</p> <p>16 products to charge different fees across app,</p> <p>17 in-stream video, and open-web display, which</p> <p>18 speaks to potentially competitive differences</p> <p>19 across those forms of digital advertising.</p> <p>20 That's one example I can look through my</p> <p>21 report if you would like me to.</p> <p>22</p>
<p style="text-align: right;">Page 115</p> <p>1 advertiser ad networks, you are only looking at</p> <p>2 transactions for open-web display ads, correct?</p> <p>3 A So I believe the market share</p> <p>4 calculations that I performed related to</p> <p>5 advertiser ad networks are with respect to</p> <p>6 open-web display impressions.</p> <p>7 Q And that's also for ad exchanges --</p> <p>8 maybe I asked this before, but I'll ask you,</p> <p>9 because I don't remember if I asked. For ad</p> <p>10 exchanges, when you estimate market shares, you</p> <p>11 estimate -- you only look at transactions for</p> <p>12 open-web display advertising; is that correct?</p> <p>13 A I believe I report in my rebuttal report</p> <p>14 a share of publisher, some measure of publisher</p> <p>15 transactions or revenue for those that owned both</p> <p>16 the web and ad property, and I, sitting here</p> <p>17 today -- I can spend some time to look for it, but</p> <p>18 it may involve exchanges or publisher ad servers,</p> <p>19 and so that's why I'm pausing before I answer your</p> <p>20 question.</p> <p>21 Q The -- with respect to -- with respect</p> <p>22 to competition in the exchange market for</p>	<p style="text-align: right;">Page 117</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q The -- when you consider the exchanges</p> <p>3 in your ad exchange market, for exchanges that can</p> <p>4 facilitate open-web display advertising as well as</p> <p>5 other types of advertising, have you done any</p> <p>6 analysis of the quality of those exchanges, taking</p> <p>7 into account all of the transactions that</p> <p>8 facilitate?</p> <p>9 MR. NAKAMURA: Objection to form.</p> <p>10 THE WITNESS: So I, I think I said</p> <p>11 earlier, performed some analysis, some</p> <p>12 analyses regarding ad exchange's ability to</p> <p>13 facilitate other forms of digital advertising</p> <p>14 than open-web display, with regards to</p> <p>15 quality, as I discuss in my report, there are</p> <p>16 various measures of quality, but industry</p> <p>17 participants often point to an exchange's</p> <p>18 ability to monetize inventory as perhaps the</p> <p>19 most important measure of quality.</p> <p>20 And so on the dimension of monetization,</p> <p>21 I've analyzed that in many ways, and indeed</p> <p>22 it's one of the ways in which Google's</p>

<p style="text-align: right;">Page 118</p> <p>1 conduct that I analyzed affected the</p> <p>2 competitiveness of rivals.</p> <p>3 BY MR. ISAACSON:</p> <p>4 Q So have you analyzed the ability of</p> <p>5 exchanges to monetize all of the inventory that</p> <p>6 they deal with, not limited to open-web display</p> <p>7 advertising?</p> <p>8 A So the primary focus of my analysis was</p> <p>9 indeed on an ad exchange's ability to monetize</p> <p>10 open-web display inventory, and, to match</p> <p>11 advertisers to open-web display inventory.</p> <p>12 Sitting here today, I don't recall all</p> <p>13 the analyses that I might have performed related</p> <p>14 to an ad exchange's ability to monetize other</p> <p>15 forms of inventory. I believe I provide -- no,</p> <p>16 let me, let me stop there.</p> <p>17 I don't recall all of the analyses that</p> <p>18 I performed, sitting here today, but I can go to</p> <p>19 them if you would like me to look for some.</p> <p>20 Q The -- have you done any analysis that</p> <p>21 you recall as to how publishers view the exchanges</p> <p>22 in your market compared to one another, taking</p>	<p style="text-align: right;">Page 120</p> <p>1 advertising. I do not -- let me, let me stop</p> <p>2 there.</p> <p>3 BY MR. ISAACSON:</p> <p>4 Q All right. Which publisher specifically</p> <p>5 values an exchange in this case because of</p> <p>6 open-web display transactions and not take into</p> <p>7 account all of the advertising the exchange</p> <p>8 facilitates?</p> <p>9 MR. NAKAMURA: Objection to form.</p> <p>10 THE WITNESS: So it's hard for me to</p> <p>11 definitively state a negative, whether</p> <p>12 publishers --</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q Can you identify by name any publisher</p> <p>15 who values an exchange in this case because of</p> <p>16 open-web display transactions and doesn't take</p> <p>17 into account all of the advertising the exchange</p> <p>18 facilitates?</p> <p>19 A So I noted in my report that there exist</p> <p>20 publishers who do not have apps, who do not have</p> <p>21 in-stream video players, who do not run social</p> <p>22 sites for which these other alternative digital</p>
<p style="text-align: right;">Page 119</p> <p>1 into account all the transactions that they</p> <p>2 facilitate, and not limited to open-web display</p> <p>3 advertising?</p> <p>4 MR. NAKAMURA: Objection to form.</p> <p>5 THE WITNESS: I think earlier I noted --</p> <p>6 discuss in my reports regarding publishers</p> <p>7 ability to multi-home or use multiple</p> <p>8 exchanges, and use multiple ad tech products</p> <p>9 for different forms of digital advertising.</p> <p>10 BY MR. ISAACSON:</p> <p>11 Q Have you done any analysis, including</p> <p>12 looking at multi-homing, that would tell you how</p> <p>13 publishers view exchanges in your market compared</p> <p>14 to one another, once you take into account all of</p> <p>15 the advertising transactions they facilitate and</p> <p>16 not limit it to open-web display advertising?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 THE WITNESS: So my analysis overall</p> <p>19 supports my opinion that publishers choosing</p> <p>20 ad exchanges for open-web display</p> <p>21 transactions value those ad exchanges'</p> <p>22 ability to transact open-web display</p>	<p style="text-align: right;">Page 121</p> <p>1 advertising formats other than web display, those</p> <p>2 would not be viable alternatives, and it's for</p> <p>3 those publishers who likely would primarily value</p> <p>4 an ad exchange's ability to transact open-web</p> <p>5 display and not advertising the publisher can't</p> <p>6 employ.</p> <p>7 Q Can you identify any publisher by name</p> <p>8 that has both a website and an app that values an</p> <p>9 exchange in this case because of the open-web</p> <p>10 display transactions and doesn't take into account</p> <p>11 all of the advertising the exchange facilitates?</p> <p>12 MR. NAKAMURA: Objection to form.</p> <p>13 THE WITNESS: I think I noted earlier</p> <p>14 that publishers could use different platforms</p> <p>15 for displaying an app. It's my recollection</p> <p>16 some publishers may use let's say AdMob, and</p> <p>17 they could use -- AdMob for app, DFP for --</p> <p>18 THE REPORTER: I'm sorry. What?</p> <p>19 THE WITNESS: Some publishers can use</p> <p>20 AdMob for app, can use DFP or GAM for</p> <p>21 display, and for those types of publishers,</p> <p>22 it's likely they would evaluate the</p>

<p style="text-align: right;">Page 122</p> <p>1 performance of those different products based</p> <p>2 on the transactions that they use them for.</p> <p>3 BY MR. ISAACSON:</p> <p>4 Q My question was about exchange products.</p> <p>5 Do you understand that? I'm asking about</p> <p>6 exchanges.</p> <p>7 A I noted --</p> <p>8 Q So let me repeat the question.</p> <p>9 Can you identify any publisher by name</p> <p>10 that has both a website and an app that values an</p> <p>11 exchange in this case because of the open-web</p> <p>12 display transactions and doesn't take into account</p> <p>13 all of the transactions the exchange facilitates?</p> <p>14 MR. NAKAMURA: Objection to form.</p> <p>15 THE WITNESS: So I noted earlier it's</p> <p>16 difficult for me to tell you definitively</p> <p>17 what a publisher does or does not take into</p> <p>18 account. I'm not a publisher.</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q Can you identify any advertiser by name</p> <p>21 that values an exchange in this case because of</p> <p>22 the open-web display transactions and doesn't take</p>	<p style="text-align: right;">Page 124</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q The -- and the same is true for an</p> <p>3 advertiser ad network, isn't it, that you would be</p> <p>4 unable to name any advertisers who evaluate an ad</p> <p>5 network based on open-web display transactions as</p> <p>6 opposed to all the transactions the ad network can</p> <p>7 facilitate?</p> <p>8 MR. NAKAMURA: Objection to form.</p> <p>9 THE WITNESS: I think my report</p> <p>10 expressed the opinion that a source of Google</p> <p>11 Ads' market power and display comes from</p> <p>12 smaller advertisers who may rely on Google</p> <p>13 Ads for, for search ads as well, so there is</p> <p>14 some degree to which the choice of Google Ads</p> <p>15 could be influenced by smaller advertisers'</p> <p>16 desire to also obtain search advertising, and</p> <p>17 that is a source of Google Ads' substantial</p> <p>18 market power.</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q And small advertisers could also</p> <p>21 consider the apps that are available by going</p> <p>22 through Google -- going through Google Ads,</p>
<p style="text-align: right;">Page 123</p> <p>1 into account all the transactions the exchange</p> <p>2 facilitates?</p> <p>3 MR. NAKAMURA: Objection to form.</p> <p>4 THE WITNESS: I think I answered a</p> <p>5 similar answer to you before. I can't speak</p> <p>6 for sure what an advertiser would or would</p> <p>7 not consider, and the extent to which there</p> <p>8 are advertisers who split up different</p> <p>9 advertising or digital advertising needs</p> <p>10 across different tools, for those</p> <p>11 advertisers, they may likely primarily value</p> <p>12 an ad exchange's ability to transact open-web</p> <p>13 display.</p> <p>14 BY MR. ISAACSON:</p> <p>15 Q You say they may, but you don't know, do</p> <p>16 you?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 THE WITNESS: I said earlier it's</p> <p>19 difficult -- I mean I cannot definitively</p> <p>20 state what an advertiser does or does not</p> <p>21 consider at all when making their decisions.</p> <p>22</p>	<p style="text-align: right;">Page 125</p> <p>1 correct?</p> <p>2 A Insofar they could do many things. They</p> <p>3 could consider that as well.</p> <p>4 Q When advertisers -- when advertisers</p> <p>5 work with Google Ads, is it your understanding</p> <p>6 that they say I want to do apps or open-web? Do</p> <p>7 they make some decision on that at the beginning?</p> <p>8 MR. NAKAMURA: Objection to form.</p> <p>9 THE WITNESS: What I've seen in the</p> <p>10 course of my, my work on this matter from</p> <p>11 Google documents and sworn testimony is that</p> <p>12 many advertisers, when they, when they choose</p> <p>13 Google Ads, do put weight on access to</p> <p>14 Google's display network, and the, including</p> <p>15 AdSense and the display inventory through</p> <p>16 AdX.</p> <p>17 I can't definitively say that none of</p> <p>18 those advertisers do not care about other</p> <p>19 types of digital advertising through Google</p> <p>20 Ads.</p> <p>21 BY MR. ISAACSON:</p> <p>22 Q So when an advertiser actually gets onto</p>

<p style="text-align: right;">Page 126</p> <p>1 Google Ads, do you have an -- do you understand</p> <p>2 that they input information about how much they</p> <p>3 want to spend and their goals, but they don't</p> <p>4 choose what type of ad it's going to be, an app</p> <p>5 versus open-web?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 THE WITNESS: It's my understanding that</p> <p>8 when AdSense launched in 2003, before this</p> <p>9 app component, Google Ads' advertisers, I</p> <p>10 thought, could -- may express some control,</p> <p>11 whether they were only purchasing search ads</p> <p>12 or through the Google Display Network.</p> <p>13 I think one of the advantages of Google</p> <p>14 Ads versus let's say a DSP is the simplified</p> <p>15 UI that allows an advertiser to submit a</p> <p>16 budget, but that's also why the small</p> <p>17 advertisers or advertisers with less complex</p> <p>18 needs wouldn't be able to use a DSP.</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q With the simplified user interface of</p> <p>21 Google Ads, do you understand that the advertiser</p> <p>22 inputs information, and then that the technology</p>	<p style="text-align: right;">Page 128</p> <p>1 which includes DFPs, AdMob, YouTube, Search.</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q If I can ask you to look at paragraph 14</p> <p>4 of your opening report.</p> <p>5 By the way, you didn't like the term "ad</p> <p>6 stack" for putting the Google publisher ad server,</p> <p>7 exchange, and advertiser ad network together. Do</p> <p>8 you have a term for -- if a, if a -- for, if I put</p> <p>9 those all together, what I should call those?</p> <p>10 A So I didn't quite follow your question.</p> <p>11 I don't think I said I liked or didn't like it.</p> <p>12 Q I'm not -- it was, it was enough, so I'm</p> <p>13 not going to call it a "tech stack" unless you're</p> <p>14 comfortable with it.</p> <p>15 So if I refer to that as their tech --</p> <p>16 their ad tech technology, and that would refer to</p> <p>17 all three things, is that, is that -- are you</p> <p>18 comfortable with that?</p> <p>19 A So what are we referring to with Google</p> <p>20 Ads, AdX and DFP, so those three products?</p> <p>21 Q Yes.</p> <p>22 A I think we can call them the relevant ad</p>
<p style="text-align: right;">Page 127</p> <p>1 decides whether the ad will be on an app or on the</p> <p>2 web, for example?</p> <p>3 MR. NAKAMURA: Objection to form.</p> <p>4 THE WITNESS: So I can't speak for</p> <p>5 certainty to the extent to which Google Ads</p> <p>6 allows advertisers to express preferences</p> <p>7 over app versus web inventory. I believe</p> <p>8 that other forms of digital differences --</p> <p>9 other digital advertising preferences could</p> <p>10 be conveyed, including whether to advertise</p> <p>11 on YouTube for in-stream video.</p> <p>12 BY MR. ISAACSON:</p> <p>13 Q And if an advertiser purchased ads on</p> <p>14 the Google display network, they can buy app</p> <p>15 inventory from AdMob or DFP, correct?</p> <p>16 MR. NAKAMURA: Objection to form.</p> <p>17 THE WITNESS: So as I use it, Google Ads</p> <p>18 is referring to the, the advertising facing</p> <p>19 component of Google Display Network, but that</p> <p>20 Google Ads, as a larger product, can be used</p> <p>21 by advertisers to access other forms of</p> <p>22 Google's digital inventory -- ad inventory,</p>	<p style="text-align: right;">Page 129</p> <p>1 tech products offered by Google, "relevant"</p> <p>2 referring to --</p> <p>3 Q I'll call them Google ad tech products</p> <p>4 just to be a little shorter, if that's okay.</p> <p>5 A Would you include DC360 under that</p> <p>6 umbrella?</p> <p>7 Q We don't have to include that.</p> <p>8 A I will clarify if it is unclear going</p> <p>9 forward.</p> <p>10 Q All right. So in paragraph 14 in the</p> <p>11 second sentence, you say, "Most common methods of</p> <p>12 monopolization undermine the ability of customers</p> <p>13 to transact freely with rivals.</p> <p>14 So if Google doesn't allow its</p> <p>15 competitors to transact freely on its ad tech</p> <p>16 products, do you consider that to be one of the</p> <p>17 methods of monopolization you're referring to</p> <p>18 here?</p> <p>19 MR. NAKAMURA: Objection to form.</p> <p>20 THE WITNESS: So the full sentence says</p> <p>21 "the most common methods to monopolization</p> <p>22 undermine the ability to customers to</p>

<p style="text-align: right;">Page 138</p> <p>1 (Whereupon, the lunch recess was 2 taken.) 3 THE VIDEOGRAPHER: We're back on the 4 record at 1:26 p.m. You may proceed. 5 (Exhibit 5 was marked for 6 identification.) 7 BY MR. ISAACSON: 8 Q We've marked as Lee Exhibit 5 a document 9 dated first quarter 2018, Bates-stamped 10 GOOG-DOJ-04442323 through 2372, and if you look at 11 2350, hopefully you see a page you recognize. 12 A This is a long document, but I will just 13 jump to -- 14 Q Yes, yes, because you referred -- 15 A -- 2350. 16 Q -- you referred me to Figure 42 and 43 17 of your report earlier, and a document you had 18 looked at referring to addressable -- using the 19 term "addressable." 20 A So I see this slide. 21 Q Right. The, the slide on page 2350 that 22 I referred to you is Figure 42 of your report,</p>	<p style="text-align: right;">Page 140</p> <p>1 calculations here to be market shares, do you? 2 A So I am, in my report, describing these 3 slides partly to, to note that Google considers 4 the set of pages or page views that are 5 addressable by its ad tech products as different 6 from those offered by its owned and operated 7 properties, as well as Amazon and Facebook. 8 Q So I'll move to strike your answer. I'm 9 going to ask you the question again. 10 You don't understand the calculations in 11 this slide to be market share estimates, do you? 12 A So in 42, Figure 42 in my report, I do 13 not believe I am citing to the percentages here as 14 a value for market shares. 15 Q Right, and when this slide divides pages 16 that are available for ads between addressable and 17 unaddressable, the unaddressable includes 18 competitors, correct? 19 MR. NAKAMURA: Objection to form. 20 BY MR. ISAACSON: 21 Q Do you see that in the notes? 22 A So it includes "Adult, Goog," which I'm</p>
<p style="text-align: right;">Page 139</p> <p>1 correct? 2 A Figure 42 is this slide from this 3 presentation. 4 Q And you have not put any of the notes in 5 your report that are at the bottom of this slide, 6 correct? 7 A Footnote 626 has some of those notes 8 from this slide. 9 Q Okay, yes. Thank you. 10 The, the "unaddressable" here 11 includes -- so there's addressable ads and 12 unaddressable ads, correct? 13 A I believe "unaddressable" and 14 "addressable" refers to the pages or the 15 inventory, not the ads. 16 Q Yes. You're correct. There's 17 addressable and unaddressable pages or page views 18 that could be used to run ads; is that correct? 19 A Yes, I believe addressable and 20 unaddressable refers to the page views coming from 21 these pages. 22 Q And you don't understand the</p>	<p style="text-align: right;">Page 141</p> <p>1 referring -- interpreting to be Google's owned and 2 operated as depicted in the, the Figure "YT," 3 which I understand to be YouTube; "FB," Facebook; 4 "Amzn," Amazon, "are not addressable." 5 Q And the notes to the slide refers to 6 unaddressable including other competitors, 7 correct? 8 MR. NAKAMURA: Objection to form. 9 THE WITNESS: I see that word, yes. 10 BY MR. ISAACSON: 11 Q And the other competitors in the chart 12 up above, as you said, include Facebook and 13 Amazon, correct? 14 A Google has many different products, many 15 different businesses, so they may consider 16 Facebook and Amazon competitors. I think I 17 acknowledge Google documents viewing Amazon and 18 Facebook as potential competitors to some of its 19 products, in some of the -- in the relevant 20 product -- in some of the relevant product 21 markets. 22 Q So I just asked you what the slide says,</p>

<p style="text-align: right;">Page 142</p> <p>1 so let's focus on that.</p> <p>2 The competitors who are in the category</p> <p>3 of "unaddressable" in this slide include Facebook</p> <p>4 and Amazon, correct?</p> <p>5 A So the slide says "other unaddressable</p> <p>6 inventory" -- sorry. The slide says "Other</p> <p>7 unaddressable, including blacklisted sites, other</p> <p>8 competitors," and in "unaddressable" also is</p> <p>9 Google, YouTube, Facebook, Amazon.</p> <p>10 Q And you don't think that Google,</p> <p>11 Facebook -- you don't think Facebook and Amazon</p> <p>12 are in the category of blacklisted sites; you</p> <p>13 understand that they are being -- that the term</p> <p>14 "competitors" in this document is referring to</p> <p>15 them, correct?</p> <p>16 A I'm not -- I understand include -- when</p> <p>17 something includes something, it may not be</p> <p>18 comprehensive.</p> <p>19 Q The two competitors that are listed in</p> <p>20 this category include Facebook and Amazon,</p> <p>21 correct?</p> <p>22 A There is Facebook and Amazon within the</p>	<p style="text-align: right;">Page 144</p> <p>1 there. The first three fall under the category of</p> <p>2 foreclosure.</p> <p>3 Do I have that right?</p> <p>4 MR. NAKAMURA: Objection to form.</p> <p>5 THE WITNESS: So I do characterize the</p> <p>6 first three items here as involving</p> <p>7 foreclosure.</p> <p>8 BY MR. ISAACSON:</p> <p>9 Q And "foreclosure" is defined as</p> <p>10 "limiting access to an important input or</p> <p>11 resource"; is that right?</p> <p>12 A That's not the full statement that is</p> <p>13 written on, on page 9.</p> <p>14 Q All right. Do you agree that that's a</p> <p>15 fair shorthand description of it?</p> <p>16 A I think it's useful to state that the</p> <p>17 way it's described here is that foreclosure refers</p> <p>18 to withholding, degrading, or limiting access.</p> <p>19 Q Okay. We'll use all those words.</p> <p>20 So "foreclosure" is defined as</p> <p>21 "withholding, degrading," or "limiting access to</p> <p>22 an important input or resource," correct?</p>
<p style="text-align: right;">Page 143</p> <p>1 unaddressable part.</p> <p>2 THE REPORTER: Was there an objection?</p> <p>3 If there was, I couldn't hear.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q The -- if we can look at paragraph 35 of</p> <p>6 your report, opening report, where you discuss</p> <p>7 foreclosure and impeding customers from working</p> <p>8 with rivals.</p> <p>9 A Should I put this aside?</p> <p>10 Q Yes.</p> <p>11 A Okay. Thank you.</p> <p>12 I see that paragraph.</p> <p>13 Q All right, and if you can hold that</p> <p>14 paragraph with your finger and look at paragraph</p> <p>15 12 on page 3 at the same time.</p> <p>16 In paragraphs 12 and 3, you list five</p> <p>17 categories of conduct.</p> <p>18 You're familiar with this part of your</p> <p>19 report, correct?</p> <p>20 A I am familiar with paragraph 12.</p> <p>21 Q So paragraph -- there's, there's five --</p> <p>22 there's descriptions of five categories of conduct</p>	<p style="text-align: right;">Page 145</p> <p>1 A That's how I'm using the term in my</p> <p>2 report.</p> <p>3 Q Right. So the input or resource --</p> <p>4 well, let's look at the first category of conduct.</p> <p>5 "Providing unrestricted access to Google Ads'</p> <p>6 advertiser demand exclusively to its AdX ad</p> <p>7 exchange, and denying comparable access to rival</p> <p>8 ad exchanges."</p> <p>9 Is the input or resource that is being</p> <p>10 denied to rivals from that first item of conduct,</p> <p>11 access to Google's advertising customers?</p> <p>12 MR. NAKAMURA: Objection to form.</p> <p>13 THE WITNESS: So the input or resource</p> <p>14 I'm referring to is Google Ads and the demand</p> <p>15 that flows through Google Ads.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q And the demand that goes through Google</p> <p>18 Ads are advertisers who are customers of Google,</p> <p>19 correct?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 THE WITNESS: So Google Ads serves both</p> <p>22 advertisers, potentially intermediated</p>

<p style="text-align: right;">Page 146</p> <p>1 through agencies; and Google Ads also</p> <p>2 facilitates transactions for publishers, and</p> <p>3 Google Ads serve those types of customers.</p> <p>4 So the input or resource, again, is Google</p> <p>5 Ads' access to -- from the exchange market,</p> <p>6 access to demand from Google Ads.</p> <p>7 BY MR. ISAACSON:</p> <p>8 Q And that demand from Google Ads is</p> <p>9 demand from Google -- is from advertisers or</p> <p>10 advertising agencies?</p> <p>11 MR. NAKAMURA: Objection to form.</p> <p>12 THE WITNESS: So the demand that flows</p> <p>13 through an ad tech product from the</p> <p>14 advertisers side represents what advertisers</p> <p>15 or their agencies are, are bidding for.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q And those advertisers and those agencies</p> <p>18 are Google customers, correct, Google Ads</p> <p>19 customers?</p> <p>20 A So Google ads serves different</p> <p>21 customers, but among the -- it serves advertisers</p> <p>22 and, in some cases, their agencies.</p>	<p style="text-align: right;">Page 148</p> <p>1 The -- you, you said, "It's not</p> <p>2 necessarily direct access to the advertisers or</p> <p>3 agencies. It's whether or not Google Ads bids</p> <p>4 into rival ad exchanges that is referenced in this</p> <p>5 item 1."</p> <p>6 So the -- when you're referring to</p> <p>7 restrictions on access to Google Ads advertisers</p> <p>8 demands, you're referring to the fact that Google</p> <p>9 Ads does not bid into rival ad exchanges for those</p> <p>10 advertisers?</p> <p>11 MR. NAKAMURA: Objection to form.</p> <p>12 THE WITNESS: It's not, quote, "for</p> <p>13 those advertisers" as you state in the</p> <p>14 question. It's Google Ads does not bid into</p> <p>15 rival ad exchanges or subsets of, of</p> <p>16 impressions, and forecloses those ad</p> <p>17 exchanges from accessing its advertiser</p> <p>18 demand.</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q You're saying that Google Ads should bid</p> <p>21 into rival exchanges for impressions but not on</p> <p>22 behalf of advertisers?</p>
<p style="text-align: right;">Page 147</p> <p>1 Q And providing access to those customers,</p> <p>2 to rival ad exchanges, would require access to</p> <p>3 Google technology to make those customers</p> <p>4 available, correct?</p> <p>5 MR. NAKAMURA: Objection to form.</p> <p>6 THE WITNESS: So it's not necessarily</p> <p>7 direct access to the advertisers or agencies.</p> <p>8 It's whether or not Google Ads bids into</p> <p>9 rival ad exchanges that is referenced in this</p> <p>10 item 1.</p> <p>11 BY MR. ISAACSON:</p> <p>12 Q So in item 1, you're referring -- when</p> <p>13 you say "unrestricted access to Google Ads</p> <p>14 advertiser demand," you're saying that Google Ads</p> <p>15 would have to be able to bid into rival ad</p> <p>16 exchanges?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 THE WITNESS: I didn't quite follow</p> <p>19 your, your question.</p> <p>20 BY MR. ISAACSON:</p> <p>21 Q I'm trying to understand your last</p> <p>22 answer.</p>	<p style="text-align: right;">Page 149</p> <p>1 MR. NAKAMURA: Objection to form.</p> <p>2 THE WITNESS: I'm not saying what Google</p> <p>3 Ads should or should not do. I'm not giving</p> <p>4 an opinion.</p> <p>5 BY MR. ISAACSON:</p> <p>6 Q Google -- when Google Ads bids into,</p> <p>7 bids into an exchange, it's bidding for an</p> <p>8 advertiser customer, correct?</p> <p>9 MR. NAKAMURA: Objection to form.</p> <p>10 THE WITNESS: Google Ads, as a bidding</p> <p>11 tool, submits bids on behalf of its</p> <p>12 advertiser or advertising agency customers.</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q And when you're referring to the</p> <p>15 exclusivity here, you're saying that Google Ads is</p> <p>16 not bidding for advertisers -- using its -- let me</p> <p>17 start over.</p> <p>18 When you're referring to the exclusivity</p> <p>19 in item 1 here, you are referring to that Google</p> <p>20 Ads is not using -- let me start over.</p> <p>21 When you -- in item 1, what you are</p> <p>22 referring to there is that Google Ads, as a</p>

<p style="text-align: right;">Page 150</p> <p>1 bidding tool, is not submitting bids on behalf of 2 its advertisers or advertising agency customers 3 into rival ad exchanges? 4 MR. NAKAMURA: Objection to form. 5 THE WITNESS: So the action that is 6 referenced in here in item 1 refers to 7 foreclosing rival ad exchanges from 8 unrestricted access to Google Ads. As I 9 described in my report, Google has restricted 10 the demand provided by Google Ads into rival 11 ad exchanges. 12 BY MR. ISAACSON: 13 Q And when you're referring to that 14 restriction, what you mean -- what you're 15 referring to is, is that Google Ads will not bid 16 for its advertisers using its tools into -- I'm 17 going to start that over. 18 When you're referring to that 19 restriction, what you are referring to here is 20 that Google Ads, as a bidding tool, is not 21 submitting bids on behalf of advertisers or 22 advertising agency customers into rival ad</p>	<p style="text-align: right;">Page 152</p> <p>1 am focusing on in item (1_, sub-element 3 of 2 paragraph 12 -- element (1) of point 3 of 3 paragraph 12. 4 Q Let's move to the second element. 5 "Providing access to and use of realtime 6 bids from AdX exclusively to its DFP publisher ad 7 server, and denying comparable access to rival 8 publisher ad servers." 9 Is the asset -- is the input or resource 10 that is being denied to rivals from item (2) 11 access to realtime bidding on Google's AdX 12 exchange? 13 MR. NAKAMURA: Objection to form. 14 THE WITNESS: I would not characterize 15 it that way. 16 BY MR. ISAACSON: 17 Q What is the input or resource that is 18 being denied to rivals in the second piece of 19 conduct here? 20 A It refers to the access to and use of 21 AdX realtime bids, also referred to as "per query 22 pricing" --</p>
<p style="text-align: right;">Page 151</p> <p>1 exchanges? 2 MR. NAKAMURA: Objection to form. 3 THE WITNESS: I don't think that's a 4 complete summary of what I said. I think 5 what's relevant is that the -- well, what 6 some Google employees are referring to as 7 "exclusivity" references the foreclosure of 8 access to some amount of Google Ads 9 advertising demand. 10 In my report, I talk that there is a 11 limited exception, so it's not the case that 12 Google Ads does not interact at all with 13 rival ad exchanges, but that this access is 14 limited. 15 BY MR. ISAACSON: 16 Q So when you're referring to that limited 17 access, what you're referring to is that Google 18 Ads, as a bidding tool, is not submitting bids on 19 behalf of advertisers or advertising agency 20 customers into rival ad exchanges in some 21 circumstances? 22 A That is the aspect of foreclosure that I</p>	<p style="text-align: right;">Page 153</p> <p>1 Q So -- 2 A -- to rival publishers ad servers. 3 Q So is the input or resource that is 4 being denied to Google rivals in your second 5 category of conduct access to AdX realtime 6 bidding? 7 MR. NAKAMURA: Objection to form. 8 THE WITNESS: I'm not using the term 9 "realtime bidding." That's not an accurate 10 characterization of, of my report or what I 11 said. What I said is the realtime bids or 12 per query pricing. 13 BY MR. ISAACSON: 14 Q Okay. I will modify it to bids. 15 So the asset denied to rivals from the 16 second conduct you described is access to AdX 17 realtime bids; is that correct? 18 MR. NAKAMURA: Objection to form. 19 THE WITNESS: That is what the second 20 element refers to. 21 BY MR. ISAACSON: 22 Q And in order to have access to realtime</p>

<p style="text-align: right;">Page 154</p> <p>1 bids on AdX, rivals would have to have some sort 2 of technical connection to Google in order to, to 3 have that access, right? 4 A So it would be similar to a connection 5 that other exchanges other than AdX provide to 6 non-Google publishers ad servers. 7 Q Google would have to affirmatively 8 implement technology to give rivals access to 9 realtime AdX bids, correct? 10 MR. NAKAMURA: Objection to form. 11 THE WITNESS: It was not evident to me 12 the extent to which Google had that ability 13 in the past, as I noted elsewhere in my 14 report. Admeld was a company that Google 15 acquired and had the technology to provide 16 realtime bids into other publisher ad 17 servers. 18 BY MR. ISAACSON: 19 Q My question was about implementing 20 technology, right? 21 If Google doesn't do the technical 22 work -- let me put it this way.</p>	<p style="text-align: right;">Page 156</p> <p>1 if you wanted to change that? 2 A It's my understanding that something 3 would need to change. 4 Q The third item here is "Providing access 5 to a feature known as Dynamic Allocation 6 exclusively to AdX within DoubleClick For 7 Publishers (DFP) granting AdX valuable first-look 8 and last-look advantages over rival ad exchanges." 9 Is the input or resource that is being 10 described in this third category, is that access 11 to either a first-look or a last-look at bids on 12 AdX? 13 MR. NAKAMURA: Objection to form. 14 THE WITNESS: So the, the input or, or 15 resource that is being denied or had been 16 denied to rival ad exchanges was the ability 17 to bid alongside AdX in realtime and obtain 18 access to the advantages associated with 19 dynamic and enhanced dynamic allocation 20 within DFP. 21 BY MR. ISAACSON: 22 Q Okay. The input -- and in order to</p>
<p style="text-align: right;">Page 155</p> <p>1 Google would have to do technical work 2 to give rivals access to realtime AdX bids, 3 correct? 4 MR. NAKAMURA: Objection to form. 5 THE WITNESS: And so my response is 6 noting that I'm not certain as to the extent 7 to which such technology may have existed and 8 was instead removed or withheld, which is 9 different from implementing something that 10 did not exist before. 11 BY MR. ISAACSON: 12 Q Right. Are you aware -- are -- can 13 Google's rivals right now go onto AdX and get, and 14 get technical access to AdX realtime bids? 15 MR. NAKAMURA: Objection to form. 16 THE WITNESS: It is my understanding at 17 present, Google does not provide realtime 18 bids, per query pricing, from AdX to rival 19 publisher ad servers. 20 BY MR. ISAACSON: 21 Q And you would have to do something to 22 the technology to provide access to realtime bids</p>	<p style="text-align: right;">Page 157</p> <p>1 reverse that and to have provided the ability to 2 bid alongside AdX in realtime, that would -- that 3 also would require at least some technical work, 4 correct? 5 MR. NAKAMURA: Objection to form. 6 THE WITNESS: So the industry provided a 7 tool that enabled such functionality called 8 "header bidding" for other servers, and 9 Google, in 2018, fully launched a version of 10 what's called "Open Bidding," which allowed 11 other exchanges, with some limitations, to 12 bid alongside AdX in realtime within DFP. 13 BY MR. ISAACSON: 14 Q And do you know how much technical work 15 was involved in creating Open Bidding? 16 MR. NAKAMURA: Objection to form. 17 THE WITNESS: I don't have a specific 18 number. 19 BY MR. ISAACSON: 20 Q You would agree it took a least some 21 technical work to implement Open Bidding? 22 A I agree that improvements to products</p>

<p style="text-align: right;">Page 158</p> <p>1 require some level of investment.</p> <p>2 Q And what you're saying is that in order</p> <p>3 to, to provide access to bids alongside of, of</p> <p>4 Google's AdX, Google would have had to have done</p> <p>5 something like Open Bidding much earlier?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 THE WITNESS: I'm not opining what</p> <p>8 Google should or needed to do. My opinion is</p> <p>9 that this particular act harmed competition.</p> <p>10 I will note that other entities created</p> <p>11 such a technical product known as "Header</p> <p>12 Bidding," and it's something that Google</p> <p>13 could have, for example, removed the</p> <p>14 last-look earlier than it did, and that did</p> <p>15 not require creating Open Bidding.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q All right. I'll move to strike after "I</p> <p>18 will note." I just want to ask questions and not</p> <p>19 get all your notes here, all right?</p> <p>20 The -- what you're saying, in order to</p> <p>21 provide access to bids alongside of Google's AdX,</p> <p>22 Google would have had to implement some technical</p>	<p style="text-align: right;">Page 160</p> <p>1 what Google could have done to have avoided that?</p> <p>2 MR. NAKAMURA: Objection to form.</p> <p>3 THE WITNESS: Well, I noted one thing --</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q And I said the question wrong, so I'm</p> <p>6 going to rephrase. I apologize.</p> <p>7 In order to provide bidding alongside of</p> <p>8 AdX, do you have an opinion what, what Google</p> <p>9 could have done to have achieved that?</p> <p>10 A So today, with a Unified First Price</p> <p>11 Auction, Google's AdX does not retain a last-look</p> <p>12 advantage over rival ad exchanges, and rival ad</p> <p>13 exchanges could -- can submit realtime bids</p> <p>14 alongside AdX into DFP.</p> <p>15 So even though -- let me strike that.</p> <p>16 So at present, those exclusive</p> <p>17 advantages to AdX have been opened up to rivals,</p> <p>18 but that's not to say the impact of the conduct is</p> <p>19 not still ongoing.</p> <p>20 Q So in order to have bidding alongside of</p> <p>21 AdX, Google could have implemented Unified Price,</p> <p>22 First Price Auction. It could have implemented</p>
<p style="text-align: right;">Page 159</p> <p>1 changes, whether it's Open Bidding or something</p> <p>2 else, much earlier than it did Open Bidding?</p> <p>3 A So that's what I was getting to. Header</p> <p>4 Bidding allowed publishers to receive realtime</p> <p>5 bids from other ad exchanges within DFP. It</p> <p>6 started emerging around 2013 or 2014, although AdX</p> <p>7 retained what has been referred to as a "last-look</p> <p>8 advantage" over those exchanges participating in</p> <p>9 Header Bidding.</p> <p>10 Q So in order to avoid this competitive</p> <p>11 effect, Google could have implemented something</p> <p>12 like Header Bidding; is that what you're saying?</p> <p>13 MR. NAKAMURA: Objection to form.</p> <p>14 THE WITNESS: I'm not expressing an</p> <p>15 opinion what Google could have done. I'm</p> <p>16 noting that the withholding of these</p> <p>17 particular advantages from rival exchanges</p> <p>18 within DFP that were associated with dynamic</p> <p>19 allocation harmed competition.</p> <p>20 BY MR. ISAACSON:</p> <p>21 Q In order to have provided bidding</p> <p>22 alongside of AdX, do you have an opinion about</p>	<p style="text-align: right;">Page 161</p> <p>1 Open Bidding.</p> <p>2 Is there anything else that Google, to</p> <p>3 your knowledge, Google could have done to have</p> <p>4 achieved that result?</p> <p>5 MR. NAKAMURA: Objection to form.</p> <p>6 THE WITNESS: I'm not sure what you mean</p> <p>7 by "that result."</p> <p>8 BY MR. ISAACSON:</p> <p>9 Q Having the -- having bidding alongside</p> <p>10 of AdX, the subject we're talking about.</p> <p>11 MR. NAKAMURA: Objection to form.</p> <p>12 THE WITNESS: So what I have described</p> <p>13 with, for example, Open Bidding represents</p> <p>14 less exclusionary alternatives to the</p> <p>15 withholding of these advantages to rival ad</p> <p>16 exchanges.</p> <p>17 Another less exclusionary act would</p> <p>18 include not providing AdX with information</p> <p>19 from the winning Header Bidding auction,</p> <p>20 thereby granting AdX last-look over Header</p> <p>21 Bidding exchanges, and Header Bidding was a</p> <p>22 tool, again, that allowed rival ad exchanges</p>

<p style="text-align: right;">Page 162</p> <p>1 to submit realtime bids into DFP.</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q Well, when Header Bidding was submitted</p> <p>4 to AdX, the -- are there other less, what you</p> <p>5 described as less exclusionary alternatives to</p> <p>6 denying rivals access to bidding alongside of</p> <p>7 access other than what you've, other than what</p> <p>8 you've named? You've named open bidding, you've</p> <p>9 named Unified Price Auctions, and you've named not</p> <p>10 providing Header Bidding bid information.</p> <p>11 MR. NAKAMURA: Objection to form.</p> <p>12 THE WITNESS: So I didn't follow the</p> <p>13 first part of your question, and I don't</p> <p>14 think that's completely accurate, what I had</p> <p>15 said before. For the second part --</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q Let me, let me put it this way.</p> <p>18 You have been listing less exclusionary</p> <p>19 alternatives to the conduct described in item 3,</p> <p>20 and you've named Open Bidding, you've named</p> <p>21 Unified First Price Auctions, and you've, you've</p> <p>22 named not sharing Header Bidding bids.</p>	<p style="text-align: right;">Page 164</p> <p>1 condition is to no longer make that condition</p> <p>2 exclusive, so --</p> <p>3 Q So how is that technically implemented</p> <p>4 for item 3?</p> <p>5 A I provided earlier examples.</p> <p>6 Q Other than examples that you have</p> <p>7 listed, are there any other ways that, for item 3,</p> <p>8 that you, that you can, that you can name for</p> <p>9 me --</p> <p>10 A So --</p> <p>11 Q -- that would relax the restriction, the</p> <p>12 restriction -- what you call a restriction there?</p> <p>13 A So those are three -- I think I listed</p> <p>14 three particular specific alternatives, but I can</p> <p>15 generally categorize things that are less</p> <p>16 exclusionary as those that allow rival ad</p> <p>17 exchanges to submit realtime bids alongside AdX so</p> <p>18 that AdX does not have a first-look over those ad</p> <p>19 exchanges, and that does not provide information</p> <p>20 about the winning bids from other ad exchanges to</p> <p>21 be used as a floor for AdX, thereby providing in</p> <p>22 AdX a last-look over those ad exchanges, and there</p>
<p style="text-align: right;">Page 163</p> <p>1 Is there anything else that you would</p> <p>2 identify as less exclusionary conduct to, to</p> <p>3 number 3?</p> <p>4 MR. NAKAMURA: Objection to form.</p> <p>5 THE WITNESS: So the first part of your</p> <p>6 statement when you summarized what I had said</p> <p>7 previously is imprecise, so I'm not agreeing</p> <p>8 with that characterization.</p> <p>9 The conduct that is referenced in item 3</p> <p>10 refers to exclusively providing these</p> <p>11 advantages I discuss in my report to AdX</p> <p>12 within DFP that are associated with dynamic</p> <p>13 allocation, and limiting or withholding</p> <p>14 access to those advantages to rival ad</p> <p>15 exchanges, and so less exclusionary</p> <p>16 alternatives involves relaxing those</p> <p>17 restrictions.</p> <p>18 BY MR. ISAACSON:</p> <p>19 Q What would relax -- what does -- how do</p> <p>20 you implement relaxing those restrictions other</p> <p>21 than things you've named so far?</p> <p>22 A So the primary way to relax an exclusive</p>	<p style="text-align: right;">Page 165</p> <p>1 may be other actions that achieve those goals,</p> <p>2 which could be then less exclusionary.</p> <p>3 Q So in general, to be less exclusionary,</p> <p>4 Google would have to allow rival ad exchanges to</p> <p>5 submit realtime bids alongside AdX; is that right?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 THE WITNESS: So allowing ad exchanges,</p> <p>8 rival ad exchanges to submit realtime bids</p> <p>9 into DFP to evaluate it alongside AdX</p> <p>10 represents a form of less exclusionary</p> <p>11 conduct.</p> <p>12 BY MR. ISAACSON:</p> <p>13 Q Now, the next items, 4 and 5, I believe</p> <p>14 you put in the category of impeding customers from</p> <p>15 working with rivals; is that correct?</p> <p>16 A I do note that those items (4) and (5)</p> <p>17 in paragraph 12, sub-bullet 3, have elements of</p> <p>18 impeding customers from working with rivals.</p> <p>19 Q The -- and with item (4) where you're</p> <p>20 talking about variable pricing floors, you're,</p> <p>21 you're talking about price floors that are</p> <p>22 submitted by rival ad exchanges -- I'm sorry.</p>

<p style="text-align: right;">Page 166</p> <p>1 In item 4, you're talking about pricing</p> <p>2 floors that are submitted by DoubleClick for</p> <p>3 Publishers into AdX, correct?</p> <p>4 MR. NAKAMURA: Objection to form.</p> <p>5 THE WITNESS: That's not accurate.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q Okay. Why don't you describe it?</p> <p>8 A So paragraph 12, bullet 3, item (4)</p> <p>9 refers to the elimination of variable price floors</p> <p>10 within DFP, which represents different reserve</p> <p>11 prices a publisher using DFP could use for the</p> <p>12 different ad exchanges that are used to sell</p> <p>13 impressions.</p> <p>14 Q And the price floors you are referring</p> <p>15 to are submitted into AdX, correct?</p> <p>16 MR. NAKAMURA: Objection to form.</p> <p>17 THE WITNESS: So within DFP, AdX</p> <p>18 receives a floor, but the variable pricing</p> <p>19 floor restriction refers to whether or not a</p> <p>20 publisher could use a different price floor</p> <p>21 with a different exchange.</p> <p>22</p>	<p style="text-align: right;">Page 168</p> <p>1 THE WITNESS: So exchanges being called</p> <p>2 within DFP can receive a floor when they're</p> <p>3 called from DFP.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q The -- all right, and in order to be</p> <p>6 less exclusionary, Google would have to permit</p> <p>7 publishers to submit variable price floors that</p> <p>8 could be submitted to Google's rivals; is that</p> <p>9 right?</p> <p>10 MR. NAKAMURA: Objection to form.</p> <p>11 THE WITNESS: So prior to 2019,</p> <p>12 publishers could submit or use variable price</p> <p>13 floors within DFP across exchanges. Post</p> <p>14 2019, that ability was removed. An example</p> <p>15 of less exclusionary conduct would be not</p> <p>16 removing that functionality.</p> <p>17 BY MR. ISAACSON:</p> <p>18 Q And that means that Google would have to</p> <p>19 permit publishers to submit variable price floors</p> <p>20 to Google's rivals, correct?</p> <p>21 MR. NAKAMURA: Objection to form.</p> <p>22 THE WITNESS: So less exclusionary</p>
<p style="text-align: right;">Page 167</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q All right. The price floors submitted</p> <p>3 by publishers are submitted into DFP for any ad</p> <p>4 exchange, correct?</p> <p>5 A Prior to the removal of the ability to</p> <p>6 set variable floors, a publisher could specify a</p> <p>7 different price floor into DFP --</p> <p>8 Q I'm not -- I'm just talking about at any</p> <p>9 time, just a price floor, whether they're variable</p> <p>10 or uniform.</p> <p>11 The price floor is submitted by</p> <p>12 publishers into DFP for any ad exchange, correct?</p> <p>13 A I guess it's the modifier "for any ad</p> <p>14 exchange" that I'm, I'm confused by.</p> <p>15 Q For any ad exchange that DFP is going to</p> <p>16 submit a price floor --</p> <p>17 THE REPORTER: I'm sorry. Say it again.</p> <p>18 BY MR. ISAACSON:</p> <p>19 Q Do you know, when DFP gets a price floor</p> <p>20 from a publisher, who does it submit that price</p> <p>21 floor to?</p> <p>22 MR. NAKAMURA: Objection to form.</p>	<p style="text-align: right;">Page 169</p> <p>1 conduct would have been Google continuing to</p> <p>2 allow publishers to use variable price</p> <p>3 floors, as is my understanding, they continue</p> <p>4 to do in certain subsets in, in France, for</p> <p>5 example.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q And so what you're talking about,</p> <p>8 though, is when you're saying "using variable</p> <p>9 price floors," that means Google submits a price,</p> <p>10 a variable price chosen by a publisher to one of</p> <p>11 its rivals, correct?</p> <p>12 MR. NAKAMURA: Objection to form.</p> <p>13 THE WITNESS: So DFP, as a publisher ad</p> <p>14 server, is a software product that publishers</p> <p>15 can use to do many things, but one of which</p> <p>16 is to facilitate the sale of indirect</p> <p>17 open-web display transactions.</p> <p>18 Publishers using DFP can specify, prior</p> <p>19 to 2019, different floors for different ad</p> <p>20 exchanges. So then when the publisher used</p> <p>21 DFP, those floors the publisher could provide</p> <p>22 would then be provided to the different</p>

<p style="text-align: right;">Page 170</p> <p>1 exchanges.</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q DFP is -- you and I know this, but the</p> <p>4 whole world doesn't know it. "DFP" is DoubleClick</p> <p>5 for Publishers, a Google product, correct?</p> <p>6 THE REPORTER: DoubleClick for what?</p> <p>7 BY MR. ISAACSON:</p> <p>8 Q Publishers. It's a Google product,</p> <p>9 correct?</p> <p>10 A Google owns DFP, yeah.</p> <p>11 Q And so what you're saying is that prior</p> <p>12 to 2019, DoubleClick for Publishers could submit</p> <p>13 different price floors to different ad -- to, to,</p> <p>14 to rival ad exchanges of Google's AdX, correct?</p> <p>15 MR. NAKAMURA: Objection to form.</p> <p>16 THE WITNESS: I think I answered that</p> <p>17 customers using -- publishers using DFP prior</p> <p>18 to 2019 were able to specify variable price</p> <p>19 floors for different exchanges.</p> <p>20 BY MR. ISAACSON:</p> <p>21 Q And if you were to return to that, what</p> <p>22 that would mean is that Google's DFP product would</p>	<p style="text-align: right;">Page 172</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q And in order to eliminate that harm to</p> <p>3 competition from removal of the feature</p> <p>4 functionality, would you have to reinstate that</p> <p>5 feature functionality and, and have Google's DFP</p> <p>6 product submit, be able to submit variable price</p> <p>7 floors to rival exchanges at Google?</p> <p>8 MR. NAKAMURA: Objection to form.</p> <p>9 THE WITNESS: So again, I'm not opining</p> <p>10 on what must be done or what has to be done.</p> <p>11 My opinion is that this action, removing this</p> <p>12 ability to set variable pricing floors within</p> <p>13 DFP, harmed competition.</p> <p>14 MR. ISAACSON: All right. You can mark</p> <p>15 this as Exhibit 6.</p> <p>16 (Exhibit 6 was marked for</p> <p>17 identification.)</p> <p>18 BY MR. ISAACSON:</p> <p>19 Q Exhibit 6 is the Complaint that was</p> <p>20 filed in this action.</p> <p>21 I assume you've had the chance to review</p> <p>22 this before?</p>
<p style="text-align: right;">Page 171</p> <p>1 be submitting variable price floors to rivals,</p> <p>2 rival exchanges of Google?</p> <p>3 MR. NAKAMURA: Objection to form.</p> <p>4 THE WITNESS: So are you, are you</p> <p>5 characterizing what --</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q I'm just trying to understand --</p> <p>8 A -- happened prior to 2019?</p> <p>9 Q No, I'm saying -- I'm just trying to</p> <p>10 understand what, what needs to be implemented</p> <p>11 here.</p> <p>12 So at a high level, in order to be not</p> <p>13 exclusionary, Google's DFP product would have to,</p> <p>14 have to be able to submit variable price floors to</p> <p>15 rival exchanges of Google?</p> <p>16 MR. NAKAMURA: Objection to form.</p> <p>17 THE WITNESS: I'm not expressing an</p> <p>18 opinion on what it would have to do in order</p> <p>19 for some conduct to not be exclusionary. My</p> <p>20 opinion is that this removal of a feature</p> <p>21 functionality that publishers were able to</p> <p>22 use within DFP harmed competition.</p>	<p style="text-align: right;">Page 173</p> <p>1 A I have read that Complaint.</p> <p>2 Q If you could look at page 132, there's a</p> <p>3 list of ten items of conduct that begin at the</p> <p>4 bottom of page 132 and continue onto page 133.</p> <p>5 Do you see that? There's a list of ten.</p> <p>6 They're numbered, too.</p> <p>7 A I see paragraph 312 which lists ten</p> <p>8 actions.</p> <p>9 Q So item 1 there is "Google's acquisition</p> <p>10 of DoubleClick to obtain not only a dominant</p> <p>11 publisher ad server, DFP, but also a nascent ad</p> <p>12 exchange, AdX, in order to pursue its goal of</p> <p>13 dominance across the entire ad tech stack."</p> <p>14 Have you, have you expressed an opinion</p> <p>15 about whether the conduct in item 1 relating to</p> <p>16 Google's acquisition of DoubleClick was</p> <p>17 anticompetitive?</p> <p>18 MR. NAKAMURA: Objection to form.</p> <p>19 THE WITNESS: I'm not expressing an</p> <p>20 opinion that Google's acquisition of</p> <p>21 DoubleClick alone harmed competition.</p> <p>22</p>

<p style="text-align: right;">Page 174</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q Looking at item 7, which refers to</p> <p>3 Project Bell, are you expressing an opinion about</p> <p>4 whether Google's Project Bell was anticompetitive?</p> <p>5 MR. NAKAMURA: Objection to form.</p> <p>6 THE WITNESS: So with respect to Bell, I</p> <p>7 express the opinion that it demonstrates</p> <p>8 Google Ads' substantial market power, but I</p> <p>9 do not express the opinion that Project Bell</p> <p>10 did or did not harm competition.</p> <p>11 BY MR. ISAACSON:</p> <p>12 Q Item 8 refers to "sell-side Dynamic</p> <p>13 Revenue Share."</p> <p>14 Have you expressed an opinion in this</p> <p>15 case as to whether sell-side dynamic revenue share</p> <p>16 harmed accommodation?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 THE WITNESS: So with respect to</p> <p>19 sell-side dynamic revenue share, I express</p> <p>20 the opinions that it represents an example of</p> <p>21 AdX's market power, that it is a way in which</p> <p>22 AdX was able to take advantage of the</p>	<p style="text-align: right;">Page 176</p> <p>1 demand exclusively to its Google -- exclusively to</p> <p>2 its AdX ad exchange, and denying comparable access</p> <p>3 to rival ad exchanges," you have given the opinion</p> <p>4 in this case about effects on an ad exchange</p> <p>5 market.</p> <p>6 Am I correct you have not given any</p> <p>7 opinions in this case about any effect of this</p> <p>8 conduct on an ad server -- on a publisher ad</p> <p>9 server market?</p> <p>10 MR. NAKAMURA: Objection to form.</p> <p>11 THE WITNESS: That is not correct.</p> <p>12 BY MR. ISAACSON:</p> <p>13 Q The -- have you given opinions that item</p> <p>14 1 had a competitive effect on the advertiser ad</p> <p>15 network market?</p> <p>16 MR. NAKAMURA: Objection to form.</p> <p>17 THE WITNESS: So I opine that Google's</p> <p>18 conduct that harmed the competitiveness of</p> <p>19 rival ad exchanges harmed the competitiveness</p> <p>20 of rivals in the publisher ad server market</p> <p>21 and the advertiser ad network market, because</p> <p>22 products in those latter two markets rely</p>
<p style="text-align: right;">Page 175</p> <p>1 last-look within DFP, but I do not express an</p> <p>2 opinion whether sell-side dynamic revenue</p> <p>3 share alone did or did not harm competition.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q And with respect to item 9, Project</p> <p>6 Poirot, have you, have you expressed an opinion in</p> <p>7 this case as to whether Project Poirot was</p> <p>8 anti-competitive?</p> <p>9 MR. NAKAMURA: Objection to form.</p> <p>10 THE WITNESS: So I opine that Project</p> <p>11 Poirot demonstrates Google's ability to</p> <p>12 affect competition among ad exchanges through</p> <p>13 behavior of its bidding tools, but I do not</p> <p>14 opine that Project Poirot alone did or did</p> <p>15 not harm competition.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q The -- we're done with the Complaint.</p> <p>18 If you can look go back to your</p> <p>19 paragraph 12(3) on page 3 of your opening report.</p> <p>20 A Paragraph 12(3).</p> <p>21 Q With regards to item (1), "Providing</p> <p>22 unrestricted access to Google Ads' advertiser</p>	<p style="text-align: right;">Page 177</p> <p>1 upon ad exchanges to transact open-web</p> <p>2 display advertising.</p> <p>3 BY MR. ISAACSON:</p> <p>4 Q The -- can you identify in the work that</p> <p>5 you have done -- I'll start that over.</p> <p>6 Can you identify where in your reports</p> <p>7 you have quantified any anticompetitive effects on</p> <p>8 publishers from the conduct in your item number 1,</p> <p>9 the unrestricted access to Google -- referring to</p> <p>10 "unrestricted access to Google Ads' advertisers"?</p> <p>11 MR. NAKAMURA: Objection to form.</p> <p>12 THE WITNESS: So the harm to</p> <p>13 customers -- in this case, publishers -- from</p> <p>14 the conduct that I examine in my reports</p> <p>15 comes from Google's conduct harming the</p> <p>16 competitiveness of its rivals in the relevant</p> <p>17 product markets, in doing so, that sustain</p> <p>18 and enhance Google's market power over the</p> <p>19 products in the relevant product markets, and</p> <p>20 that, in turn, harms publishers through three</p> <p>21 different channels.</p> <p>22</p>

<p style="text-align: right;">Page 178</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q Sir, can I just ask you to readdress</p> <p>3 yourself to the question, what I have asked you?</p> <p>4 Have you quantified that harm to</p> <p>5 publishers?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 THE WITNESS: I provided various pieces</p> <p>8 of analysis that support my opinion that the</p> <p>9 harm to publishers is material.</p> <p>10 With regards to publisher harm, I</p> <p>11 provide quantitative evidence that an</p> <p>12 increase in ad tech fees reduces publisher</p> <p>13 payouts, and I provide quantitative analysis</p> <p>14 that indicates that item 1, which refers to</p> <p>15 AdX's exclusivity, materially contributes to</p> <p>16 higher fees for ad tech products.</p> <p>17 BY MR. ISAACSON:</p> <p>18 Q The, the quantitative evidence about an</p> <p>19 increase in ad tech fees that you're referring to;</p> <p>20 is that a quantitative analysis of the AdX fees?</p> <p>21 A So I present results from simulations</p> <p>22 from Google that varied the AdX take rate, and</p>	<p style="text-align: right;">Page 180</p> <p>1 everything I've seen, including data,</p> <p>2 documents, and these experience in</p> <p>3 simulations, I use to support my opinion that</p> <p>4 the harm to publishers from this conduct was</p> <p>5 material.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q Yeah, you just said that. Have you</p> <p>8 attempted to quantify what "material" means?</p> <p>9 A It's --</p> <p>10 Q Is it one percent? Ten dollars? Is</p> <p>11 there any, any expression of what "material"</p> <p>12 means?</p> <p>13 A What I mean by "material" is something</p> <p>14 that's --</p> <p>15 Q I'm not asking you what you mean by</p> <p>16 "material." I'm asking you whether there's any</p> <p>17 quantification of what you call "material" in your</p> <p>18 reports.</p> <p>19 MR. NAKAMURA: Objection to form.</p> <p>20 THE WITNESS: The evidence I provide or</p> <p>21 the analysis I provide regarding AdX's</p> <p>22 exclusivity supports my opinion that the</p>
<p style="text-align: right;">Page 179</p> <p>1 showing that --</p> <p>2 Q I'm just, I'm just trying to understand</p> <p>3 which fees you're referring to.</p> <p>4 So are you referring to AdX -- when you</p> <p>5 say that you provided "quantitative evidence that</p> <p>6 an increase in ad tech fees reduces publisher</p> <p>7 payouts," are you referring to AdX fees?</p> <p>8 A So one simulation I refer to looks at</p> <p>9 AdX take rates and shows that as those increase,</p> <p>10 publishers' payouts strictly fall.</p> <p>11 Q Right, and have you attempted to</p> <p>12 quantify, right, the amount of effect on</p> <p>13 publishers from Google's limitation of Google Ads</p> <p>14 demand?</p> <p>15 A So what I just described and other</p> <p>16 evidence supports my opinion that the harm to</p> <p>17 publishers from this action led to material harm.</p> <p>18 Q Have you attempted to quantify what</p> <p>19 "material harm" means in this case?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 THE WITNESS: I provided evidence</p> <p>22 that -- or the analysis I conducted, using</p>	<p style="text-align: right;">Page 181</p> <p>1 impact in fees for AdX relative to less</p> <p>2 exclusionary conduct is not de minimus. It's</p> <p>3 material.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q All right. Material -- you're using not</p> <p>6 "de minimus, material."</p> <p>7 Have you attempted to quantify by any</p> <p>8 metric, whether it's dollars or percentages, what</p> <p>9 de minimus means in your analysis?</p> <p>10 MR. NAKAMURA: Objection to form.</p> <p>11 THE WITNESS: So I think the challenge</p> <p>12 with -- you're asking for like a specific</p> <p>13 number?</p> <p>14 BY MR. ISAACSON:</p> <p>15 Q Yes.</p> <p>16 A As I note in my report, I'm comparing</p> <p>17 outcomes between the observed world and</p> <p>18 alternatives that involve less restrictive --</p> <p>19 sorry -- less exclusionary conduct.</p> <p>20 With respect to Google Ads, AdX's</p> <p>21 exclusivity, that conduct has been ongoing for</p> <p>22 quite some time, so both any specific alternative</p>

<p style="text-align: right;">Page 190</p> <p>1 publishers benefited.</p> <p>2 Q But am I correct that, that in your</p> <p>3 view, providing bidding alongside AdX to other</p> <p>4 exchanges rather than the last-look to AdX, that</p> <p>5 -- I need to say it the other way around.</p> <p>6 By providing the last-look to AdX, that</p> <p>7 rather than providing bidding alongside AdX to</p> <p>8 other exchanges, that made AdX more attractive to</p> <p>9 publisher customers?</p> <p>10 MR. NAKAMURA: Objection to form.</p> <p>11 THE WITNESS: I'm not quite sure I</p> <p>12 follow. I guess my, my opinion -- when I say</p> <p>13 "bidding alongside AdX," I mean those rival</p> <p>14 exchanges submit realtime bids, not in the</p> <p>15 waterfall, and they would not be subject to</p> <p>16 last-look, and if that were the case, it's my</p> <p>17 opinion that publishers would be better off</p> <p>18 from that than only allowing AdX to submit</p> <p>19 realtime bids at the head of the waterfall.</p> <p>20 BY MR. ISAACSON:</p> <p>21 Q Did providing a last-look to AdX make</p> <p>22 AdX more attractive to publishers than rival</p>	<p style="text-align: right;">Page 192</p> <p>1 waterfall? So this hypothetical is not fully</p> <p>2 formed for, for me to answer your question.</p> <p>3 Q Do you have an opinion on the</p> <p>4 anticompetitive effects of last-look independent</p> <p>5 of first-look?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 THE WITNESS: So I provide evidence that</p> <p>8 giving up last-look, holding everything else</p> <p>9 fixed, reduced impressions and spend on AdX.</p> <p>10 There are Google experiments in 2019 that</p> <p>11 isolated -- it's my recollection -- the</p> <p>12 impact of removing last-look, so that would</p> <p>13 be consistent with Google's last-look</p> <p>14 providing it with an advantage.</p> <p>15 BY MR. ISAACSON:</p> <p>16 Q So just looking at the provision of</p> <p>17 last-look on AdX, and that alone, holding</p> <p>18 everything else constant, did the last-look make</p> <p>19 AdX more attractive to Google customers?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 BY MR. ISAACSON:</p> <p>22 Q Specifically publishers?</p>
<p style="text-align: right;">Page 191</p> <p>1 exchanges?</p> <p>2 MR. NAKAMURA: Objection; form.</p> <p>3 THE WITNESS: It's my opinion that this</p> <p>4 exclusive -- these exclusive advantages</p> <p>5 provided by AdX harmed competition, and so</p> <p>6 that harmed competition could make</p> <p>7 publishers -- well, my opinion is that that</p> <p>8 competition harmed publisher customers.</p> <p>9 BY MR. ISAACSON:</p> <p>10 Q Maybe you didn't hear my question.</p> <p>11 Did providing a last-look to AdX make</p> <p>12 AdX more attractive to publishers compared to</p> <p>13 rival exchanges?</p> <p>14 MR. NAKAMURA: Objection to form.</p> <p>15 THE WITNESS: And what's important for</p> <p>16 me to understand is what is the relevant</p> <p>17 comparison. It's -- you're, you're saying</p> <p>18 providing AdX with last-look versus --</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q Not providing it.</p> <p>21 A But then if you don't provide AdX with</p> <p>22 last-look, does it still have first-look over the</p>	<p style="text-align: right;">Page 193</p> <p>1 MR. NAKAMURA: Same objection.</p> <p>2 THE WITNESS: So I'm trying to think</p> <p>3 about whether a publisher, as you're asking</p> <p>4 me, would view AdX as more attractive versus</p> <p>5 AdX --</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q If you --</p> <p>8 A -- winning more auctions.</p> <p>9 Q If you don't know, feel free to tell me</p> <p>10 if you don't know how a publisher felt like that.</p> <p>11 I just want to know if you have an opinion about</p> <p>12 whether's Google first -- last-look made AdX more</p> <p>13 attractive to publishers.</p> <p>14 MR. NAKAMURA: Objection to form.</p> <p>15 THE WITNESS: So last-look versus not</p> <p>16 having last-look may have made AdX relatively</p> <p>17 more attractive to rival ad exchanges.</p> <p>18 BY MR. ISAACSON:</p> <p>19 Q Can we look at your rebuttal report,</p> <p>20 page 85, Figure 13?</p> <p>21 A Is it possible to take a break soon?</p> <p>22 Now is fine?</p>

<p style="text-align: right;">Page 194</p> <p>1 MR. ISAACSON: Yes. It's not about</p> <p>2 torture.</p> <p>3 THE VIDEOGRAPHER: We're off the record</p> <p>4 at 2:40 p.m.</p> <p>5 (Whereupon, a short recess was</p> <p>6 taken.)</p> <p>7 THE VIDEOGRAPHER: We're back on the</p> <p>8 record at 2:53. Please proceed.</p> <p>9 BY MR. ISAACSON:</p> <p>10 Q I tried to say this before. Turn to</p> <p>11 page 85 of your rebuttal report, Figure 13.</p> <p>12 All right. There's a chart here, Figure</p> <p>13 13, "Lee and Israel estimates of AdX market shares</p> <p>14 among ad exchanges using Google and third-party</p> <p>15 data."</p> <p>16 And this is a chart that you prepared</p> <p>17 based on your analysis of the data and then the</p> <p>18 backup materials from Dr. Israel's report; is that</p> <p>19 correct?</p> <p>20 A That's correct.</p> <p>21 Q All right, and this is referring to AdX</p> <p>22 market share, so we're talking about the exchange</p>	<p style="text-align: right;">Page 196</p> <p>1 56 percent or below.</p> <p>2 Q And for the United States in 2022, if</p> <p>3 you look at the dollar figures, whether they're</p> <p>4 fees or spend, the market share numbers, whether</p> <p>5 it's you or Dr. Israel, are from 34 to 38 percent,</p> <p>6 correct?</p> <p>7 MR. NAKAMURA: Objection to form.</p> <p>8 THE WITNESS: So the spend shares for ad</p> <p>9 exchanges that I compute in the United States</p> <p>10 is 34 percent. The fee share is 37 percent.</p> <p>11 There's a number from Dr. Israel that is</p> <p>12 38 percent.</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q And in the United States market, the AdX</p> <p>15 market share measured by impressions has decreased</p> <p>16 from 56 percent in 2020 to 47 percent in 2022.</p> <p>17 Am I reading that correctly?</p> <p>18 MR. NAKAMURA: Objection to form.</p> <p>19 THE WITNESS: I want to be precise. I</p> <p>20 believe these are impressions computed for --</p> <p>21 BY MR. ISAACSON:</p> <p>22 Q Users?</p>
<p style="text-align: right;">Page 195</p> <p>1 market, correct?</p> <p>2 A This is looking at market shares for ad</p> <p>3 exchanges.</p> <p>4 Q And this is ad exchanges that facilitate</p> <p>5 open-web display advertising?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 THE WITNESS: The products in these AdX</p> <p>8 market shares that I present here are those</p> <p>9 ad exchanges that can facilitate the sale of</p> <p>10 open-web display.</p> <p>11 BY MR. ISAACSON:</p> <p>12 Q There is -- for all of the share</p> <p>13 calculations from 2019 to 2022, worldwide and in</p> <p>14 the United States, there's no year where you find</p> <p>15 that Google AdX's market share is 70 percent or</p> <p>16 above, correct?</p> <p>17 A So the numbers here for these measures</p> <p>18 and years are below 70 percent.</p> <p>19 Q And in the United States, all of the</p> <p>20 shares are 56 percent or below, correct?</p> <p>21 A For these United States measures that I</p> <p>22 compute, all the numbers in this table are</p>	<p style="text-align: right;">Page 197</p> <p>1 A U.S. users, and in 2020, among ad</p> <p>2 exchanges, that number is 56 percent, and then it</p> <p>3 goes to 47 percent in 2022.</p> <p>4 Q And looking at the United States market</p> <p>5 based on spend, you calculate a 43 percent share</p> <p>6 in 2019, declining to 34 percent in 2022, correct?</p> <p>7 A 43 percent in 2020 for spend among</p> <p>8 U.S. -- open-web impressions from U.S. users, and</p> <p>9 then in 2022, that number is 34 percent for that</p> <p>10 measure.</p> <p>11 Q If you look at paragraph 12 of your</p> <p>12 opening report again, but now sub 2 instead of sub</p> <p>13 3.</p> <p>14 A I see that paragraph.</p> <p>15 Q Right. At the end of that paragraph,</p> <p>16 you say Google has "possessed that market power in</p> <p>17 each of the relevant markets in recent years, and</p> <p>18 likely since at least 2015."</p> <p>19 Have you expressed any opinions in this</p> <p>20 case that Google possessed market power in any</p> <p>21 market prior to 2015?</p> <p>22 A I just wanted to say that's not what</p>

<p style="text-align: right;">Page 198</p> <p>1 this paragraph says.</p> <p>2 Q I'm -- that's why I'm asking you the</p> <p>3 question. I'm not telling you what the paragraph</p> <p>4 says.</p> <p>5 A I see. So what, what is your question</p> <p>6 again?</p> <p>7 Q Do you have an opinion in this case</p> <p>8 whether Google possessed market power in any</p> <p>9 market prior to 2015?</p> <p>10 A So my opinion here, just to be clear, is</p> <p>11 that it possesses substantial market power in the</p> <p>12 three relevant product markets, across both</p> <p>13 geographic markets. It has possessed that</p> <p>14 substantial and sustained market power -- or</p> <p>15 substantial market power in each of the relevant</p> <p>16 markets in recent years, and likely since at least</p> <p>17 2015.</p> <p>18 I'm not providing an opinion for whether</p> <p>19 it possessed or did not possess substantial market</p> <p>20 power in the relevant markets before 2015.</p> <p>21 Q Are you giving an opinion as to which</p> <p>22 year Google did acquire substantial market power</p>	<p style="text-align: right;">Page 200</p> <p>1 significant proportion of the digital advertising</p> <p>2 market."</p> <p>3 Do you understand that when Dr. Ravi</p> <p>4 talks about the display advertising market, he's</p> <p>5 referring to a market that would include websites,</p> <p>6 social media networks and, and/or mobile apps?</p> <p>7 MR. NAKAMURA: Objection to form.</p> <p>8 THE WITNESS: I don't know the</p> <p>9 calculations here, nor do I know whether --</p> <p>10 the value of whether what he's calling a</p> <p>11 market is a relevant antitrust market.</p> <p>12 (Reporter clarification.)</p> <p>13 THE WITNESS: Whether, whether he has</p> <p>14 examined whether what he is calling a market</p> <p>15 is a relevant antitrust market.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q Do you have an opinion in this case as</p> <p>18 to whether there is a display advertising market</p> <p>19 in the United States?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 THE WITNESS: Could you describe what</p> <p>22 you mean by that term?</p>
<p style="text-align: right;">Page 199</p> <p>1 in the relevant -- in the three relevant markets?</p> <p>2 MR. NAKAMURA: Objection to form.</p> <p>3 THE WITNESS: I am not providing a</p> <p>4 precise date.</p> <p>5 MR. ISAACSON: This would be Exhibit 7.</p> <p>6 (Exhibit 7 was marked for</p> <p>7 identification.)</p> <p>8 BY MR. ISAACSON:</p> <p>9 Q Exhibit 7, which has also previously</p> <p>10 been marked as Ravi Exhibit 3, is an article by</p> <p>11 Dr. Ravi titled "First-Price Auctions in Online</p> <p>12 Display Advertising," and the -- you cite this in</p> <p>13 Footnote 316 of your report, so I'm assuming</p> <p>14 you've read this article before.</p> <p>15 A I have looked at this article.</p> <p>16 Q On the first page, there's a section in</p> <p>17 bold titled "Evolution of the Display Advertising</p> <p>18 Market."</p> <p>19 A I see that.</p> <p>20 Q And Dr. Ravi writes, "Display</p> <p>21 advertising, with an estimated market share of</p> <p>22 54 percent in the United States, has grown to be a</p>	<p style="text-align: right;">Page 201</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q I'm just going to give you the term and</p> <p>3 ask you if you have an opinion based on your</p> <p>4 knowledge of those terms.</p> <p>5 Do you have an opinion as to whether</p> <p>6 there is a display advertising market in the</p> <p>7 United States?</p> <p>8 MR. NAKAMURA: Objection to form.</p> <p>9 THE WITNESS: So I'm not expressing an</p> <p>10 opinion whether there's a relevant antitrust</p> <p>11 market that comprises the general term of</p> <p>12 "display advertising."</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q Now, in your report you discuss -- I'm</p> <p>15 done with this article.</p> <p>16 Your report discusses that "larger and</p> <p>17 more sophisticated advertisers often use DSPs, but</p> <p>18 often also use advertiser networks."</p> <p>19 Do you generally remember that?</p> <p>20 A Can I revise my previous answer to your</p> <p>21 question? I misspoke.</p> <p>22 So in my rebuttal report, I do express</p>

<p style="text-align: right;">Page 222</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q Yes, it is. We're talking about this</p> <p>3 chart.</p> <p>4 A Yeah.</p> <p>5 Q So did I, did I read the chart</p> <p>6 correctly?</p> <p>7 A AdX had a 20 percent take rate over the</p> <p>8 period of 2020 --</p> <p>9 THE REPORTER: Say that again. I'm</p> <p>10 sorry.</p> <p>11 THE WITNESS: AdX had approximately a</p> <p>12 20 percent take rate from 2020 to the end of</p> <p>13 '22. The average third-party exchange take</p> <p>14 rate was less than that, and as we discussed</p> <p>15 before, the AdX share sometime in 2020</p> <p>16 touched 60 percent; at the end of '22, ended</p> <p>17 around 45 percent.</p> <p>18 BY MR. ISAACSON:</p> <p>19 Q All right. You talked about, before</p> <p>20 about doing an analysis of a hypothetical</p> <p>21 monopolist.</p> <p>22 The -- when you're looking at prices</p>	<p style="text-align: right;">Page 224</p> <p>1 of an ad tech product to monetize inventory,</p> <p>2 and you would look at the price the product</p> <p>3 would charge.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q And in looking at whether prices are</p> <p>6 above competitive levels in comparing products,</p> <p>7 you would also compare them -- let me start over.</p> <p>8 In looking at whether prices are above</p> <p>9 competitive levels, you would also look at</p> <p>10 quality-adjusted prices, correct?</p> <p>11 A You would consider the extent to which a</p> <p>12 product has quality or prices that would deviate</p> <p>13 from competitive levels.</p> <p>14 Q You just said "quality or prices." That</p> <p>15 wasn't my question.</p> <p>16 In looking at whether prices are above</p> <p>17 competitive levels, an economist looks at</p> <p>18 quality-adjusted prices, correct?</p> <p>19 MR. NAKAMURA: Objection to form.</p> <p>20 THE WITNESS: That is one thing one</p> <p>21 would factor in. For example, if two</p> <p>22 products have different features or qualities</p>
<p style="text-align: right;">Page 223</p> <p>1 charged by a hypothetical monopolist to decide</p> <p>2 whether they're above competitive levels, you</p> <p>3 would look at quality-adjusted prices; is that</p> <p>4 correct?</p> <p>5 A The exercise that I think you are</p> <p>6 referring to is examining a hypothetical</p> <p>7 monopolist for the purpose of market definition.</p> <p>8 In that analysis, one examines whether a</p> <p>9 hypothetical monopolist of a set of products can</p> <p>10 exercise significant market power, which includes</p> <p>11 being able to price products above competitive</p> <p>12 levels or degrade quality below competitive</p> <p>13 levels.</p> <p>14 Q The -- and in analyzing market power and</p> <p>15 whether that exists, when looking at prices, you</p> <p>16 would also look at whether -- you would also look</p> <p>17 at quality-adjusted prices, correct?</p> <p>18 MR. NAKAMURA: Objection to form.</p> <p>19 THE WITNESS: When examining market</p> <p>20 power, it's important to consider the quality</p> <p>21 of a product. We discussed a measure of</p> <p>22 quality earlier today, which is the ability</p>	<p style="text-align: right;">Page 225</p> <p>1 that they offer customers, they may be</p> <p>2 offered at different prices, but that doesn't</p> <p>3 necessarily mean those prices are not at</p> <p>4 competitive levels.</p> <p>5 What's relevant is the extent to which,</p> <p>6 for example, other products that enter with</p> <p>7 similar features or cost structures, would</p> <p>8 that result in price levels falling or</p> <p>9 quality levels increasing, and if so, that is</p> <p>10 evidence that prevailing price levels or</p> <p>11 quality levels are not at competitive levels.</p> <p>12 BY MR. ISAACSON:</p> <p>13 Q All right, and when you say "what's</p> <p>14 relevant is the extent to which, for example,</p> <p>15 other products that enter with similar features or</p> <p>16 cost structures," by "similar features," that's --</p> <p>17 you're referring to quality, correct?</p> <p>18 MR. NAKAMURA: Objection to form.</p> <p>19 THE WITNESS: So a quality advantage for</p> <p>20 a product is --</p> <p>21 BY MR. ISAACSON:</p> <p>22 Q Try to listen to my question.</p>

<p style="text-align: right;">Page 230</p> <p>1 price comparisons for ad exchanges?</p> <p>2 A So in my analysis, when opining on</p> <p>3 market definition and market power, I am</p> <p>4 accounting for quality differences in my analysis.</p> <p>5 Q So do you consider yourself to have done</p> <p>6 a price comparison that was quality adjusted for</p> <p>7 ad exchanges?</p> <p>8 MR. NAKAMURA: Objection to form.</p> <p>9 THE WITNESS: What I've done in terms of</p> <p>10 directly comparing fees is comparing their</p> <p>11 take rates. In my subsequent analysis, to</p> <p>12 support opinions regarding market definition</p> <p>13 and market power, I account for these</p> <p>14 monetization differences and indeed note that</p> <p>15 they're a source of AdX's market power.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q I don't know why this is difficult to</p> <p>18 answer yes or no.</p> <p>19 Do you consider yourself to have done a</p> <p>20 quality-adjusted price comparison for the prices</p> <p>21 of exchanges?</p> <p>22 MR. NAKAMURA: Objection to form.</p>	<p style="text-align: right;">Page 232</p> <p>1 MR. NAKAMURA: Same objection.</p> <p>2 THE WITNESS: I note in Footnote 723 of</p> <p>3 my rebuttal report, talking about different</p> <p>4 CPMs and payouts that ad exchanges provide,</p> <p>5 and noting that these differences can result</p> <p>6 from different types of impressions they tend</p> <p>7 to transact.</p> <p>8 So there are price comparisons across</p> <p>9 exchanges that account for the breadth of</p> <p>10 impressions that exchanges can transact, and</p> <p>11 that is a measure of quality, so there are</p> <p>12 price comparisons that account for those</p> <p>13 quality differences.</p> <p>14 BY MR. ISAACSON:</p> <p>15 Q So do you think you've done a</p> <p>16 price-adjusted quality comparison for ad exchanges</p> <p>17 in this case; yes or no?</p> <p>18 MR. NAKAMURA: Objection to form.</p> <p>19 THE WITNESS: I performed analyses of</p> <p>20 fees and prices that, that support my</p> <p>21 opinions regarding market power. Those</p> <p>22 opinions account for quality differences.</p>
<p style="text-align: right;">Page 231</p> <p>1 THE WITNESS: So I compared the take</p> <p>2 rates across different exchanges, as we</p> <p>3 discussed, and in the rest of my analysis, I</p> <p>4 examined the extent to which those price</p> <p>5 differences are attributable to things like</p> <p>6 quality.</p> <p>7 BY MR. ISAACSON:</p> <p>8 Q Do you believe you've answered my</p> <p>9 question with a yes or a no?</p> <p>10 MR. NAKAMURA: Objection to form.</p> <p>11 BY MR. ISAACSON:</p> <p>12 Q My question is: Do you believe you have</p> <p>13 done quality-adjusted price comparisons for ad</p> <p>14 exchanges?</p> <p>15 MR. NAKAMURA: Same objection.</p> <p>16 THE WITNESS: It's my same answer. I</p> <p>17 provided price comparisons of take rates for</p> <p>18 ad exchanges with analyses of quality</p> <p>19 differences.</p> <p>20 BY MR. ISAACSON:</p> <p>21 Q And do you believe that's a quality-</p> <p>22 adjusted price comparison?</p>	<p style="text-align: right;">Page 233</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q So is that "yes"?</p> <p>3 MR. NAKAMURA: Objection to form.</p> <p>4 THE WITNESS: I mean I think I provided</p> <p>5 my answer.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q And do you have any explanation as to</p> <p>8 why you can't answer that question yes or no?</p> <p>9 MR. NAKAMURA: Objection to form.</p> <p>10 THE WITNESS: I think it's the term</p> <p>11 you're using is vague.</p> <p>12 BY MR. ISAACSON:</p> <p>13 Q The term I'm using is "quality-adjusted</p> <p>14 prices," which is a term used throughout your</p> <p>15 report.</p> <p>16 A That is a term that I use in my report.</p> <p>17 Q And you consider that term vague?</p> <p>18 A I consider your term, "quality-adjusted</p> <p>19 price comparison," to be vague.</p> <p>20 Q The -- you said there's a monetization</p> <p>21 difference between AdX and other exchanges, right?</p> <p>22 A AdX has -- AdX monetizes differently</p>

<p style="text-align: right;">Page 238</p> <p>1 A So there --</p> <p>2 Q Are you comparing quality-adjusted</p> <p>3 prices?</p> <p>4 A So this analysis here I point to is just</p> <p>5 comparing their ad serving fees.</p> <p>6 Q And do you know anything about the</p> <p>7 quality of the Equativ publisher ad server?</p> <p>8 A I know things about the features, but I</p> <p>9 believe publishers, by and large, use DFP, and</p> <p>10 part of that is due to its exclusive access to</p> <p>11 realtime bids from AdX.</p> <p>12 Q And you've done an analysis in this case</p> <p>13 that, without looking at quality-adjusted prices,</p> <p>14 just looking at prices, that controlling for</p> <p>15 changes in the composition of publishers over</p> <p>16 time -- controlling for changes in the composition</p> <p>17 of publishers over time, the fees for DoubleClick</p> <p>18 for Publishers have remained relatively flat</p> <p>19 between 2014 and 2023?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 THE WITNESS: So I have performed an</p> <p>22 analysis using DFP ad serving fees that I</p>	<p style="text-align: right;">Page 240</p> <p>1 do you know whether those fees remain constant on</p> <p>2 a quality-adjusted basis?</p> <p>3 MR. NAKAMURA: Objection to form.</p> <p>4 THE WITNESS: I haven't performed that</p> <p>5 analysis. It wasn't necessary for my</p> <p>6 opinions.</p> <p>7 BY MR. ISAACSON:</p> <p>8 Q If we can go back to your E pages of</p> <p>9 your first report, so page E-2.</p> <p>10 So looking at your Figure 110, am I</p> <p>11 correct that [REDACTED] [REDACTED] [REDACTED] and [REDACTED]</p> <p>12 four out of the six exchanges reported in that</p> <p>13 year, all charged higher take rates than AdX?</p> <p>14 MR. NAKAMURA: Objection to form.</p> <p>15 THE WITNESS: What year are you looking</p> <p>16 at?</p> <p>17 BY MR. ISAACSON:</p> <p>18 Q 2018.</p> <p>19 A Oh, in 2018.</p> <p>20 MR. NAKAMURA: Same objection.</p> <p>21 THE WITNESS: So you mentioned [REDACTED]</p> <p>22 and the others are --</p>
<p style="text-align: right;">Page 239</p> <p>1 have noted that those fees remain relatively</p> <p>2 flat, controlling for changes in the</p> <p>3 composition of publishers over time.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q And you also agree that the take rate</p> <p>6 for AdX has remained largely constant over time?</p> <p>7 MR. NAKAMURA: Objection to form.</p> <p>8 THE WITNESS: It's my understanding that</p> <p>9 the AdX take rate, on average, for open-web</p> <p>10 display inventory has been approximately</p> <p>11 20 percent since the early 2010s, 2012, and</p> <p>12 perhaps earlier as well.</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q And do you know if AdX's take rate has</p> <p>15 remained constant on a quality-adjusted basis?</p> <p>16 MR. NAKAMURA: Objection to form.</p> <p>17 THE WITNESS: I don't recall performing</p> <p>18 that analysis. It wasn't necessary for my</p> <p>19 opinions.</p> <p>20 BY MR. ISAACSON:</p> <p>21 Q And the DoubleClick for Publishers fees</p> <p>22 that you say remain constant, have you done a --</p>	<p style="text-align: right;">Page 241</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q Charging higher take rates than Google</p> <p>3 AdX.</p> <p>4 A So in 2018, [REDACTED] [REDACTED] [REDACTED] and</p> <p>5 [REDACTED] --</p> <p>6 THE REPORTER: Say that again.</p> <p>7 THE WITNESS: [REDACTED] [REDACTED] [REDACTED]</p> <p>8 and [REDACTED] -- scratch [REDACTED] but [REDACTED] [REDACTED]</p> <p>9 and [REDACTED] have calculated open-web</p> <p>10 indirect display take rates that are above</p> <p>11 20 percent.</p> <p>12 BY MR. ISAACSON:</p> <p>13 Q And so actually, I think you mentioned</p> <p>14 before this table is an annual basis. So when it</p> <p>15 says January 2018, is this a number for the whole</p> <p>16 year?</p> <p>17 A This is not the table I referenced</p> <p>18 earlier.</p> <p>19 Q Is this -- so is this a number for</p> <p>20 January or is it for the whole year?</p> <p>21 A This one is the January of each year.</p> <p>22 MR. NAKAMURA: Counsel, we've been going</p>

<p style="text-align: right;">Page 242</p> <p>1 for over an hour, so if we could stop for a</p> <p>2 break.</p> <p>3 MR. ISAACSON: Sure. Well, it's a</p> <p>4 matter of whether you want me to keep going</p> <p>5 to finish this table here.</p> <p>6 MR. NAKAMURA: Make it quick.</p> <p>7 BY MR. ISAACSON:</p> <p>8 Q The -- so in January 2018, were</p> <p>9 [REDACTED] and [REDACTED] charging prices above</p> <p>10 competitive levels?</p> <p>11 MR. NAKAMURA: Objection to form.</p> <p>12 THE WITNESS: So I'm not opining on what</p> <p>13 the competitive levels precisely are. I</p> <p>14 don't know the extent to which [REDACTED]</p> <p>15 [REDACTED] or [REDACTED] were able to profitably</p> <p>16 price at these levels, nor, sitting here, do</p> <p>17 I know precisely the volume that they</p> <p>18 transacted these higher rates.</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q So for example, just the fact that</p> <p>21 [REDACTED] is charging a 26 percent take rate and</p> <p>22 Google AdX is -- well, let me say this</p>	<p style="text-align: right;">Page 244</p> <p>1 quality-adjusted. I think, for example,</p> <p>2 [REDACTED] in my rebuttal report, I describe</p> <p>3 why the product it offers is differentiated,</p> <p>4 and one needs to account for those</p> <p>5 differences when evaluating whether a given</p> <p>6 product's take rate in nominal terms is</p> <p>7 supracompetitive.</p> <p>8 It's my opinion that Google AdX, its</p> <p>9 20 percent fee is supracompetitive.</p> <p>10 BY MR. ISAACSON:</p> <p>11 Q So in January 2018, it's your opinion</p> <p>12 that Google AdX's 20 percent take rate is</p> <p>13 supracompetitive or above competitive levels,</p> <p>14 and -- but you don't have that opinion about</p> <p>15 [REDACTED] who is charging 37 percent, because they</p> <p>16 are offering a differentiated product, and you</p> <p>17 need to account for those differences?</p> <p>18 A I'm expressing an opinion of Google</p> <p>19 AdX's take rate of 20 percent being</p> <p>20 supracompetitive.</p> <p>21 Q Yes, but you've also said that in</p> <p>22 order -- in order to determine whether [REDACTED]</p>
<p style="text-align: right;">Page 243</p> <p>1 differently.</p> <p>2 The fact that three out of the six</p> <p>3 companies reported for January 2018 are charging</p> <p>4 higher take rates than Google AdX at that time</p> <p>5 does not mean that those companies are charging</p> <p>6 prices above competitive levels; is that correct?</p> <p>7 A Oh, no. My statement earlier was that I</p> <p>8 had not opined the exact number of</p> <p>9 supracompetitive prices, but those are likely</p> <p>10 higher. I was noting that it's not clear the</p> <p>11 extent to which they are profitably charging those</p> <p>12 prices, and with [REDACTED] you see that those take</p> <p>13 rates fall in the subsequent years.</p> <p>14 Q The -- and so do you have an opinion</p> <p>15 then that in that year, that the prices above</p> <p>16 20 percent are supracompetitive?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 BY MR. ISAACSON:</p> <p>19 Q In January 2018?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 THE WITNESS: Well, I think this comes</p> <p>22 back to your point regarding</p>	<p style="text-align: right;">Page 245</p> <p>1 37 percent take rate is above competitive levels</p> <p>2 or supracompetitive, you would need to account for</p> <p>3 the differences of [REDACTED] compared to the other</p> <p>4 exchanges, correct?</p> <p>5 MR. NAKAMURA: Objection to form.</p> <p>6 THE WITNESS: I think there are features</p> <p>7 that I would want to analyze before</p> <p>8 expressing an opinion. Even within a</p> <p>9 relevant antitrust product market, products</p> <p>10 may be differentiated. With [REDACTED] I just</p> <p>11 point to Footnote 723 of my rebuttal report</p> <p>12 that discusses that particular exchange.</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q And with respect to the, to the</p> <p>15 exchanges in your Figure 110 where you are</p> <p>16 displaying take rates across several years, you</p> <p>17 did not do any comparisons of the features of</p> <p>18 those exchanges or their quality as compared to</p> <p>19 AdX; is that correct?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 THE WITNESS: So, for example, the</p> <p>22 footnote I referenced just before talks about</p>

<p style="text-align: right;">Page 266</p> <p>1 this case that Google Ads could be considered a</p> <p>2 tying product?</p> <p>3 MR. NAKAMURA: Objection to form.</p> <p>4 THE WITNESS: So as an economist, I'm</p> <p>5 noting that tying can be defined as</p> <p>6 conditioning access to an important product</p> <p>7 the firm controls on the purchase of another</p> <p>8 product that the firm also controls.</p> <p>9 BY MR. ISAACSON:</p> <p>10 Q So I want to focus you on where you're</p> <p>11 referring to market A, the tying product.</p> <p>12 Do you see that?</p> <p>13 A So this paragraph --</p> <p>14 Q Let me ask the question.</p> <p>15 Do you see "market A tying product"?</p> <p>16 A So tying product refers to the product</p> <p>17 that customers desire in market A.</p> <p>18 Q Yes.</p> <p>19 A That is the tying product.</p> <p>20 Q You have not alleged that Google Ads is</p> <p>21 a tying product in this case?</p> <p>22 MR. NAKAMURA: Objection to form.</p>	<p style="text-align: right;">Page 268</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q I'm not asking you for any --</p> <p>3 A -- tying product.</p> <p>4 Q -- legal opinions. Let me, let me just</p> <p>5 be clear. I'm asking you for an opinion as an</p> <p>6 economist, okay?</p> <p>7 Have you given an opinion in this case</p> <p>8 that Google Ads is a tying product in a market?</p> <p>9 MR. NAKAMURA: Objection to form.</p> <p>10 THE WITNESS: I have given the opinion</p> <p>11 that unrestricted access to Google Ads is</p> <p>12 conditioned on the use of Google's other ad</p> <p>13 tech products, including AdX. As an</p> <p>14 economist, that satisfies this definition I'm</p> <p>15 providing in this paragraph.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q So have -- in this case, have you -- are</p> <p>18 you giving the opinion that Google Ads is a tying</p> <p>19 product in a relevant market?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 THE WITNESS: My opinion is, again, that</p> <p>22 Google Ads -- scratch that.</p>
<p style="text-align: right;">Page 267</p> <p>1 THE WITNESS: My opinion is that Google</p> <p>2 is foreclosed access to Google Ads,</p> <p>3 unrestricted access to Google Ads to rival ad</p> <p>4 exchanges, and as a matter of economics, the</p> <p>5 unrestricted access to Google Ads is</p> <p>6 conditioned on the use of Google's AdX</p> <p>7 product in the exchange market, or</p> <p>8 potentially through AdSense.</p> <p>9 BY MR. ISAACSON:</p> <p>10 Q So that wasn't my question, sir. I</p> <p>11 think you know what my question was.</p> <p>12 Look at "tying product."</p> <p>13 Do you see that in your report?</p> <p>14 A I see --</p> <p>15 Q Do you see the words "tying product"</p> <p>16 right after market A? Do you see that?</p> <p>17 A I do see that.</p> <p>18 Q Okay. Have you given an opinion in this</p> <p>19 case that Google Ads is a tying product?</p> <p>20 MR. NAKAMURA: Objection to form.</p> <p>21 THE WITNESS: So I'm not offering a</p> <p>22 legal opinion on --</p>	<p style="text-align: right;">Page 269</p> <p>1 My opinion is that unrestricted access</p> <p>2 to Google Ads is conditioned on the user</p> <p>3 access to AdX and AdSense.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q So I'm getting the sense --</p> <p>6 A As an economist --</p> <p>7 Q -- you don't want to answer this</p> <p>8 question, because you keep saying -- telling me</p> <p>9 about unconditional access. That's fine. You</p> <p>10 have that opinion. You said it several times.</p> <p>11 But I want to know specifically, not a</p> <p>12 legal opinion, as an economist using the terms of</p> <p>13 your report, are you giving the opinion that</p> <p>14 Google Ads is a tying product in a relevant</p> <p>15 market?</p> <p>16 MR. NAKAMURA: Objection to form.</p> <p>17 THE WITNESS: So as I write in this</p> <p>18 paragraph, one method through which firms can</p> <p>19 foreclose rivals from access to an important</p> <p>20 input or resource is by tying. I note that</p> <p>21 tying is conditioning access to a resource or</p> <p>22 input to the purchase or use of another</p>

<p style="text-align: right;">Page 270</p> <p>1 product the firm also controls.</p> <p>2 In this case, those conditions can be</p> <p>3 used to describe the relationship between</p> <p>4 unrestricted access to Google Ads and the use</p> <p>5 of Google's other ad tech products, including</p> <p>6 AdX and AdSense.</p> <p>7 BY MR. ISAACSON:</p> <p>8 Q So I'm going to be blunt with you, sir.</p> <p>9 We're going to make the statement to the court</p> <p>10 that you have not defined Google Ads as a tying</p> <p>11 product in a relevant market, all right?</p> <p>12 Are you going to say that that's true or</p> <p>13 false?</p> <p>14 MR. NAKAMURA: Objection to form.</p> <p>15 THE WITNESS: As an economist, one way</p> <p>16 of describing the relationship between Google</p> <p>17 Ads and AdX is that Google has conditions or</p> <p>18 tied access to Google Ads demand on the use</p> <p>19 of its AdX exchange product.</p> <p>20 BY MR. ISAACSON:</p> <p>21 Q So are you going to tell the court that,</p> <p>22 yes, as an economist, you have described Google</p>	<p style="text-align: right;">Page 272</p> <p>1 actual advertising, correct?</p> <p>2 MR. NAKAMURA: Objection to form.</p> <p>3 THE WITNESS: I define -- I evaluated</p> <p>4 relevant product markets, as you noted, which</p> <p>5 contain ad tech products.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q And you have not evaluated relevant</p> <p>8 product markets where advertising, including</p> <p>9 advertising through Google Ads, is a relevant</p> <p>10 product market?</p> <p>11 MR. NAKAMURA: Objection to form.</p> <p>12 THE WITNESS: I'm not expressing the</p> <p>13 opinion in the relevance of a product market</p> <p>14 comprising advertising. Is that --</p> <p>15 BY MR. ISAACSON:</p> <p>16 Q I think you've, I think you've answered</p> <p>17 the question. Thank you.</p> <p>18 The -- now, with respect to the</p> <p>19 geographic scope of the market, you expressed an</p> <p>20 opinion that there's a relevant geographic market</p> <p>21 that's worldwide for all three of your product</p> <p>22 markets, correct?</p>
<p style="text-align: right;">Page 271</p> <p>1 Ads as a tying product in a relevant market?</p> <p>2 MR. NAKAMURA: Objection to form.</p> <p>3 THE WITNESS: As an economist, I would</p> <p>4 not use that language. I would use the</p> <p>5 language that I provided, that unrestricted</p> <p>6 access to Google Ads is conditioned on use or</p> <p>7 tied to the use of AdX and AdSense.</p> <p>8 BY MR. ISAACSON:</p> <p>9 Q Right, and you have not defined any</p> <p>10 market in this case where the products would</p> <p>11 include advertising through Google Ads, correct?</p> <p>12 A I have --</p> <p>13 MR. NAKAMURA: Objection to form.</p> <p>14 THE WITNESS: I have defined a market.</p> <p>15 Let me scratch that.</p> <p>16 I have evaluated a relevant product</p> <p>17 market, advertiser ad networks, that contains</p> <p>18 Google Ads.</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q Right. You, you, you've defined markets</p> <p>21 in this case with ad technology, correct? You</p> <p>22 have not defined a market where the products are</p>	<p style="text-align: right;">Page 273</p> <p>1 A So I evaluate a worldwide geographic</p> <p>2 market, excluding certain regions, for the three</p> <p>3 relevant product markets.</p> <p>4 Q So for shorthand, I'm going to use the</p> <p>5 term "worldwide market." I understand that you</p> <p>6 exclude certain regions. I just don't want to</p> <p>7 have to say that every time.</p> <p>8 The -- in addition to a worldwide</p> <p>9 geographic market, you also agree that the United</p> <p>10 States is a relevant geographic market for the</p> <p>11 three markets you've defined in this case,</p> <p>12 correct?</p> <p>13 A I also opine that the United States is a</p> <p>14 relevant geographic market for the three product</p> <p>15 markets.</p> <p>16 Q In general, drawing a broad market</p> <p>17 violates principles articulated by the Department</p> <p>18 of Justice and Federal Trade Commission that</p> <p>19 relevant markets should be narrowly defined,</p> <p>20 correct?</p> <p>21 MR. NAKAMURA: Objection to form.</p> <p>22 THE WITNESS: I don't agree with that</p>

<p style="text-align: right;">Page 274</p> <p>1 characterization.</p> <p>2 BY MR. ISAACSON:</p> <p>3 Q Why don't you look at paragraph 326 of</p> <p>4 your rebuttal report, and Footnote 510.</p> <p>5 In Footnote 510, did you write, "Drawing</p> <p>6 such a broad market also violates the principle</p> <p>7 that has been articulated by the Department of</p> <p>8 Justice and Federal Trade Commission that relevant</p> <p>9 markets, when used for computing market shares,</p> <p>10 should be narrowly defined."</p> <p>11 A "When used for computing market shares</p> <p>12 should be narrowly defined," there is a</p> <p>13 parenthetical in that quote.</p> <p>14 Q I'm going to ask you that. I'm going to</p> <p>15 ask you that next.</p> <p>16 So then did you also quote the merger</p> <p>17 guidelines, saying, "Defining a market broadly to</p> <p>18 include relatively distant product or geographic</p> <p>19 substitutes can lead to misleading market shares."</p> <p>20 A I see that.</p> <p>21 Q And did you also quote it, saying,</p> <p>22 "Market shares of different products that narrowly</p>	<p style="text-align: right;">Page 276</p> <p>1 Q Have you evaluated information --</p> <p>2 reviewed information in this case that says that</p> <p>3 the -- that shows that the value of advertising</p> <p>4 impressions varies greatly across countries in the</p> <p>5 world?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 THE WITNESS: I believe I have seen that</p> <p>8 evidence as well as advertisers transacting</p> <p>9 across country boundaries.</p> <p>10 BY MR. ISAACSON:</p> <p>11 Q The -- you've seen evidence that, for</p> <p>12 example, advertising impressions in the United</p> <p>13 States and in Europe are much higher than the rest</p> <p>14 of the world?</p> <p>15 MR. NAKAMURA: Objection to form.</p> <p>16 THE WITNESS: Can you repeat your</p> <p>17 question, please.</p> <p>18 BY MR. ISAACSON:</p> <p>19 Q Sure.</p> <p>20 Have you seen evidence that the cost of</p> <p>21 advertising impressions in the United States and</p> <p>22 in some parts of Europe are much higher than the</p>
<p style="text-align: right;">Page 275</p> <p>1 define markets are more likely to capture the</p> <p>2 relative competitive significance of these</p> <p>3 products, and often more accurately reflect</p> <p>4 competition between close substitutes."</p> <p>5 Did you also quote that?</p> <p>6 A I did quote that.</p> <p>7 Q And did you also quote the guidelines</p> <p>8 saying, "Because the relative competitive</p> <p>9 significance of more distant substitutes is apt to</p> <p>10 be overstated by their share of sales, when the</p> <p>11 agencies rely on market shares and concentration,</p> <p>12 they usually do so in the smallest relevant</p> <p>13 market, satisfying the hypothetical monopolist</p> <p>14 test."</p> <p>15 A I see that.</p> <p>16 Q Okay. In this case, you've given the</p> <p>17 opinion that both the broad worldwide market and</p> <p>18 the United -- and the narrower United States</p> <p>19 geographic market are appropriate relevant markets</p> <p>20 in this case; is that right?</p> <p>21 A I do, and I describe at length why I do</p> <p>22 so in my reports.</p>	<p style="text-align: right;">Page 277</p> <p>1 rest of the world?</p> <p>2 MR. NAKAMURA: Objection to form.</p> <p>3 THE WITNESS: I have seen information</p> <p>4 indicating that digital advertising prices</p> <p>5 can vary across countries.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q And that --</p> <p>8 A Probably it's based on user location. I</p> <p>9 don't remember the precise metric of which those</p> <p>10 calculations are measured.</p> <p>11 Q And those price differences between</p> <p>12 countries are a relevant consideration in, in</p> <p>13 defining a geographic market, correct?</p> <p>14 A So I don't recall your statement</p> <p>15 corresponding to the prices of the ad tech</p> <p>16 products, which are the components of the relevant</p> <p>17 product markets.</p> <p>18 Q Okay. Are you -- have you looked at the</p> <p>19 price differences between ad tech products across</p> <p>20 the worldwide markets, across your worldwide</p> <p>21 market?</p> <p>22 MR. NAKAMURA: Objection to form.</p>

70 (Pages 274 - 277)

<p style="text-align: right;">Page 278</p> <p>1 THE WITNESS: So, for example, AdX -- I,</p> <p>2 I report take rates across the worldwide and</p> <p>3 U.S. geographic markets, noting that, for</p> <p>4 example, AdX has 20 percent.</p> <p>5 BY MR. ISAACSON:</p> <p>6 Q Right. So that's a take rate.</p> <p>7 So when you say 20 percent of the cost</p> <p>8 of an impression, if the costs of the impressions</p> <p>9 vary widely across the world, then the amount of</p> <p>10 money you take in will vary widely across the</p> <p>11 world; isn't that mathematically right?</p> <p>12 MR. NAKAMURA: Objection to form.</p> <p>13 THE WITNESS: In this -- in the ad tech</p> <p>14 industry for many products, prices are quoted</p> <p>15 as take rates or margins. We spent much of</p> <p>16 today talking about prices as measured as</p> <p>17 such.</p> <p>18 BY MR. ISAACSON:</p> <p>19 Q Right. When we've been talking about</p> <p>20 prices today, we're talking about a percentage</p> <p>21 take rate, the equivalent of a commission, a</p> <p>22 20 percent commission, for example. We have not</p>	<p style="text-align: right;">Page 280</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q Do you think that the fact that</p> <p>3 advertisements are in different languages in</p> <p>4 different countries is pertinent to deciding</p> <p>5 whether there is a worldwide or a U.S., United</p> <p>6 States market?</p> <p>7 MR. NAKAMURA: Objection to form.</p> <p>8 THE WITNESS: Well, stepping back, my</p> <p>9 opinion is that both the worldwide, with the</p> <p>10 caveats, and the United States are relevant</p> <p>11 geographic markets.</p> <p>12 With respect to the worldwide geographic</p> <p>13 market, I describe the reasons why it is</p> <p>14 appropriate, in particular the fact that</p> <p>15 customers of all three product markets</p> <p>16 transact across country and region</p> <p>17 boundaries, U.S. publishers do not only</p> <p>18 receive advertising dollars from U.S.</p> <p>19 advertisers.</p> <p>20 Secondly, supply-side competition among</p> <p>21 these ad tech products is global. When we</p> <p>22 think about scale, impressions are not</p>
<p style="text-align: right;">Page 279</p> <p>1 been actually talking about the money that's</p> <p>2 actually taken in from an advertisement or from an</p> <p>3 ad tech, from an ad tech transaction?</p> <p>4 I won't bother you with that question.</p> <p>5 The, the -- do you agree there are</p> <p>6 differences in regulatory frameworks across the</p> <p>7 United States that are applicable to ad tech?</p> <p>8 MR. NAKAMURA: Objection to form.</p> <p>9 THE WITNESS: I'm aware that, for</p> <p>10 example, the French competition authority,</p> <p>11 for example, has some different regulations</p> <p>12 on the operation --</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q Have you done any --</p> <p>15 A -- of the --</p> <p>16 Q Have you done any analysis of, of</p> <p>17 regulatory comparisons, other than France, for</p> <p>18 advertising technology across the globe?</p> <p>19 MR. NAKAMURA: Objection to form.</p> <p>20 THE WITNESS: I believe I have. I just</p> <p>21 can't, sitting here today, recall all</p> <p>22 references and analyses that I, I did.</p>	<p style="text-align: right;">Page 281</p> <p>1 necessarily restricted to country boundaries.</p> <p>2 And third, Google's conduct that I</p> <p>3 examined is not specific to a single country.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q So I'll move to strike the answer.</p> <p>6 I asked you whether language differences</p> <p>7 were pertinent.</p> <p>8 So are language differences relevant to</p> <p>9 deciding whether there's a worldwide market?</p> <p>10 A What is relevant, among other factors,</p> <p>11 is the extent to which the geographic region</p> <p>12 defined is useful and informative for</p> <p>13 understanding the competitive effects of Google's</p> <p>14 conduct.</p> <p>15 Q I'm just asking whether language</p> <p>16 differences are relevant in the worldwide -- in</p> <p>17 determining whether there's a worldwide market.</p> <p>18 A Insofar as differences that you</p> <p>19 mentioned undermine the importance of the other</p> <p>20 reasons why the worldwide market is appropriate,</p> <p>21 they would be considerations.</p> <p>22 MR. ISAACSON: The -- this will be</p>

<p style="text-align: right;">Page 282</p> <p>1 Exhibit 9.</p> <p>2 (Exhibit 9 was marked for</p> <p>3 identification.)</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q All right. Exhibit 9 is Bates-stamped</p> <p>6 ATT-GCID-00111234 through 288.</p> <p>7 All right. This is a document produced</p> <p>8 by Xandr in this case, and if you look at 241 at</p> <p>9 the bottom, it says at the top of that page,</p> <p>10 " percent of Xandr's current sale-side revenue</p> <p>11 comes from the EMEA."</p> <p>12 You understand that's Europe/Middle</p> <p>13 East/Africa, right?</p> <p>14 A I do understand EMEA stands for what you</p> <p>15 said.</p> <p>16 Q So it says, " percent of Xandr's</p> <p>17 current sell-side revenue comes from EMEA, where</p> <p>18 competitive dynamics and customer needs differ</p> <p>19 meaningfully from the United States."</p> <p>20 Have you seen evidence in this case that</p> <p>21 different -- for different regions of the world,</p> <p>22 competitive dynamics and customer needs differ</p>	<p style="text-align: right;">Page 284</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q Have you seen any business documents in</p> <p>3 this case that say the competitive dynamics for ad</p> <p>4 tech in the United States are comparable to the</p> <p>5 rest of the world?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 THE WITNESS: I don't, sitting here</p> <p>8 today, recall any such documents.</p> <p>9 BY MR. ISAACSON:</p> <p>10 Q And we discussed before that the United</p> <p>11 States is seeking damages on behalf of federal</p> <p>12 agency advertisers.</p> <p>13 Have you seen any data suggesting</p> <p>14 federal agency advertisers purchase ad inventory</p> <p>15 outside the United States?</p> <p>16 MR. NAKAMURA: Objection to form.</p> <p>17 THE WITNESS: Sitting here today, I, I</p> <p>18 don't recall seeing that information.</p> <p>19 MR. ISAACSON: The -- this will be the</p> <p>20 next exhibit, Exhibit 10.</p> <p>21 (Exhibit 10 was marked for</p> <p>22 identification.)</p>
<p style="text-align: right;">Page 283</p> <p>1 meaningfully for ad tech?</p> <p>2 MR. NAKAMURA: Objection to form.</p> <p>3 THE WITNESS: I recall seeing</p> <p>4 differences in sales or, or shares of, of</p> <p>5 different products across different regions.</p> <p>6 I think -- I cite to other Google documents</p> <p>7 that talk about some differences across EMEA</p> <p>8 versus other geographic regions, like the</p> <p>9 Americas and APAC.</p> <p>10 BY MR. ISAACSON:</p> <p>11 Q Okay. This document says</p> <p>12 "Competitive" -- this Xandr document says,</p> <p>13 "Competitive dynamics differ meaningfully from the</p> <p>14 United States."</p> <p>15 For any of the ad technology you've been</p> <p>16 discussing in this case, have you seen documents</p> <p>17 saying the competitive dynamics for ad tech do not</p> <p>18 differ meaningfully from the United States?</p> <p>19 MR. NAKAMURA: Objection to form.</p> <p>20 THE WITNESS: It's hard to affirm to</p> <p>21 the -- confirm a negative, but sitting here</p> <p>22 today, I don't recall.</p>	<p style="text-align: right;">Page 285</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q All right. This is another</p> <p>3 Microsoft/Xandr document. It is Bates-stamped</p> <p>4 MSFT-LIT-0000000137. It's a native document, so</p> <p>5 it's 115 pages.</p> <p>6 The -- looking at page 17, this document</p> <p>7 from Xandr, which is owned by Microsoft, it says,</p> <p>8 "In the United States, Xandr's core market is</p> <p>9 limited in scale and highly competitive."</p> <p>10 The -- and you see that Xandr's core</p> <p>11 segment there includes "Display, Digital Video,</p> <p>12 Advance TV, Traditional TV."</p> <p>13 A So I haven't had a chance to review this</p> <p>14 whole slide deck. I'm only looking at page 17.</p> <p>15 Q Well, then let me ask you to look at</p> <p>16 page 15. That will be easier.</p> <p>17 It says, "Global ad spending is</p> <p>18 increasing" -- oh, I'm sorry. Page 16.</p> <p>19 "Global ad spending is increasing, with</p> <p>20 international growth outpacing the United States."</p> <p>21 Do you see that at the top?</p> <p>22 A I see that.</p>

<p style="text-align: right;">Page 286</p> <p>1 Q And then there's ad spend by regions of</p> <p>2 the world, and Xandr's conducting a separate</p> <p>3 analysis for the United States, Europe, Middle</p> <p>4 East, Africa, Latin America, and APAC.</p> <p>5 Have you, have you seen other business</p> <p>6 documents breaking up the world into different</p> <p>7 regions from ad tech companies?</p> <p>8 A So as I noted before, and I do cite to</p> <p>9 Google documents which look at Americas, APAC,</p> <p>10 EMA, and one of those documents talks about the</p> <p>11 overlap between the buy-side and sell-side</p> <p>12 interacting across two regions.</p> <p>13 Q And do the Google documents also discuss</p> <p>14 that there are competitive differences for</p> <p>15 different -- for their, for their, for their</p> <p>16 products in different parts of the world?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 THE WITNESS: There may. I don't recall</p> <p>19 the Google documents explicitly off the top</p> <p>20 of my mind that make any such explicit</p> <p>21 call-outs, but they may exist.</p> <p>22</p>	<p style="text-align: right;">Page 288</p> <p>1 THE WITNESS: So after the acquisition</p> <p>2 of Admeld, it's my understanding Google began</p> <p>3 replicating some of Admeld's features into</p> <p>4 AdX and DFP.</p> <p>5 BY MR. ISAACSON:</p> <p>6 Q And do you know what Admeld</p> <p>7 functionality was put into AdX?</p> <p>8 A My understanding is that there was some</p> <p>9 functionalities related to yield management, in</p> <p>10 particular managing static networks that were</p> <p>11 built post the acquisition within AdX and DFP, but</p> <p>12 certain features that Admeld offered were not</p> <p>13 integrated or were eliminated.</p> <p>14 Q When you refer to "yield management," is</p> <p>15 that also called "yield optimization"?</p> <p>16 A So yield management can refer to many</p> <p>17 things in this, in this industry. What I'm</p> <p>18 referring to is what so-called yield managers</p> <p>19 around 2010 help publishers do. So many things</p> <p>20 help publishers manage or optimize yield</p> <p>21 monetization.</p> <p>22 What I discuss in my report with respect</p>
<p style="text-align: right;">Page 287</p> <p>1 MR. ISAACSON: All right. Why don't we</p> <p>2 take a break. I have to decide what I'm</p> <p>3 going to do with my remaining time. Off the</p> <p>4 record.</p> <p>5 THE VIDEOGRAPHER: Going off the record</p> <p>6 at 5:14 p.m.</p> <p>7 (Whereupon, a short recess was</p> <p>8 taken.)</p> <p>9 THE VIDEOGRAPHER: We're now back on the</p> <p>10 record at 5:30 p.m.</p> <p>11 You may proceed.</p> <p>12 BY MR. ISAACSON:</p> <p>13 Q All right. Turning to the subject of</p> <p>14 Admeld, following the acquisition of Admeld by</p> <p>15 Google, Google merged Admeld in AdX -- into AdX,</p> <p>16 correct?</p> <p>17 MR. NAKAMURA: Objection to form.</p> <p>18 BY MR. ISAACSON:</p> <p>19 Q Let me -- following the acquisition,</p> <p>20 Google merged the Admeld products and AdX products</p> <p>21 together, correct?</p> <p>22 MR. NAKAMURA: Objection to form.</p>	<p style="text-align: right;">Page 289</p> <p>1 to yield management is the ability to deal with</p> <p>2 so-called "managed networks," and again, help a</p> <p>3 publisher rank in their waterfall different ad</p> <p>4 networks, and that might have been called yield</p> <p>5 optimization as well.</p> <p>6 Q Okay. That yield management</p> <p>7 functionality that you were just describing was</p> <p>8 incorporated into AdX, correct?</p> <p>9 A So some additional versions of yield</p> <p>10 management capabilities after the Admeld</p> <p>11 acquisition were built into Google's ad tech</p> <p>12 products. I don't know precisely whether they</p> <p>13 were into DFP or into AdX.</p> <p>14 Q All right. So, but the -- to your</p> <p>15 knowledge, the Admeld yield management</p> <p>16 functionality was incorporated into Google</p> <p>17 products, whether it was DoubleClick for</p> <p>18 Publishers or AdX?</p> <p>19 A So it's my understanding that functions</p> <p>20 that Admeld used to offer, some of them were</p> <p>21 later, some of them rebuilt into the AdX or DFP</p> <p>22 platform, and some features, notably, realtime</p>

<p style="text-align: right;">Page 290</p> <p>1 bidding into third-party publishers ad servers, 2 were not brought over or incorporated with 3 Google's products. 4 Q Were there any functions of Admeld that 5 you're aware of that were not brought over into 6 Google's products other than realtime bidding into 7 third-party publisher ad servers? 8 A There may also have been restrictions 9 imposed on customers' ability to use what 10 previously was Admeld with other exchanges or 11 yield managers. I discuss this here in my report, 12 but the main feature that I describe that was not 13 incorporated was this provision of realtime bids 14 into rival publisher ad servers. 15 Q So I just want make sure we're -- I 16 understand what you're talking about is your main 17 point. I'm going to come to that. I just want to 18 make sure there's no other points here. 19 The -- are you saying that, to your 20 knowledge, Google failed to incorporate Admeld 21 yield management functionality in any respect? 22 A Can you repeat your question, please.</p>	<p style="text-align: right;">Page 292</p> <p>1 MR. NAKAMURA: Objection to form. 2 THE WITNESS: So AdX was allowed for 3 realtime auctions. 4 BY MR. ISAACSON: 5 Q The only functionality from Admeld that 6 you would -- that you could identify that was not 7 incorporated into a Google product was the 8 provision of realtime bids in the rival publisher 9 ad servers; is that correct? 10 A So sitting here today, that's the, the 11 primary one I can recall. 12 Q Right, and so would you have an -- do 13 you have an opinion as to whether the acquisition 14 of Admeld was anticompetitive, separate from the 15 fact that Google did not incorporate realtime bids 16 into rival publisher ad servers? 17 MR. NAKAMURA: Objection to form. 18 THE WITNESS: So my opinion regarding 19 the harm to competition arising from the 20 Admeld acquisition includes the actions that 21 Google took subsequent to that acquisition, 22 including the removal of the realtime bidding</p>
<p style="text-align: right;">Page 291</p> <p>1 Q Sure. 2 Are you saying that, to your knowledge, 3 Google failed to incorporate any, any part of 4 Admeld's yield management functionality? 5 MR. NAKAMURA: Objection to form. 6 THE WITNESS: That is not what I am 7 saying. 8 BY MR. ISAACSON: 9 Q Is the only Admeld technology that you 10 are aware of that wasn't incorporated into Google 11 products was, was the provision of realtime bids 12 into rival publisher ad servers? 13 A So one other thing that I describe in my 14 reports is an exchange-like product that Admeld 15 had offered post-acquisition. My understanding, 16 Admeld's product was shut down, but AdX remained. 17 So insofar as there was a separate ad exchange 18 operated by Admeld, that was not something that 19 continued to be in operation -- 20 Q Right, but referring to functionality, 21 exchange functionality was fully incorporated into 22 AdX following the Admeld acquisition?</p>	<p style="text-align: right;">Page 293</p> <p>1 feature. 2 BY MR. ISAACSON: 3 Q Have you identified in your reports any 4 harm to competition from the Admeld acquisition 5 separate from Google not incorporating the 6 provision of realtime bids into rival publisher ad 7 servers? 8 MR. NAKAMURA: Objection to form. 9 THE WITNESS: So one, one of the other 10 sources through which competition was 11 impacted was the elimination of this other ad 12 exchange product that Admeld offered. It 13 also eliminated an option that customers had 14 to receive realtime bids from a different 15 yield manager. 16 So it's that elimination of a competitor 17 that also harmed competition. 18 BY MR. ISAACSON: 19 Q Do you -- you've used, I believe, a 20 four-part test to analyze whether there's 21 exclusionary conduct that affects competition 22 adversely in this case?</p>

<p style="text-align: right;">Page 294</p> <p>1 A So I, I articulate a four-step 2 framework -- 3 Q Right. 4 A -- for evaluating the competitive 5 effects -- 6 Q Applying that four -- 7 A -- of Google's conduct. 8 Q Applying your four-step framework, if 9 the Admeld acquisition went forward and Google had 10 incorporated realtime bidding into third-party 11 exchanges, would you have an opinion whether the 12 acquisition was anticompetitive? 13 MR. NAKAMURA: Objection to form. 14 THE WITNESS: So my evaluation of that, 15 the conduct related to Admeld, evaluates the 16 complete, the total -- the totality of 17 acquisition and behavior surrounding it, 18 including the, the removal of, of that 19 feature. I did not conduct a separate 20 analysis. 21 BY MR. ISAACSON: 22 Q You did not conduct a separate analysis</p>	<p style="text-align: right;">Page 296</p> <p>1 (Exhibit 11 was marked for 2 identification.) 3 BY MR. ISAACSON: 4 Q Exhibit 11 has previously been marked as 5 Abrontes-Metz Exhibit 17. 6 Did you review the Abrontes-Metz 7 deposition? 8 A I did not. 9 Q The -- and you cite this document at 10 note -- Footnote 1069 of your report. It's 11 Bates-stamped GOOG-DOJ-03606441 to 451. 12 And in your report, you say in paragraph 13 731, you say, "For example, a 2012 client 14 migration document following the acquisition noted 15 that Google did not plan to integrate Admeld's API 16 features that, if allowed, would 'pass realtime 17 AdX pricing into a non-DFP ad server,'" and then 18 do you see you cite this document for that? 19 A I see that. 20 Q And in that footnote, you accurately 21 quote that "Admeld can be called via API to serve 22 an ad. There are a small handful of Admeld</p>
<p style="text-align: right;">Page 295</p> <p>1 of the acquisition of Admeld apart from Google's 2 failure to incorporate realtime bids into rival 3 publisher ad servers; is that correct? 4 MR. NAKAMURA: Objection to form. 5 THE WITNESS: So my analysis 6 incorporated the removal of the realtime bids 7 into rival publisher ad servers as part of, 8 of my analysis. 9 BY MR. ISAACSON: 10 Q And so returning to my question, if the 11 Admeld acquisition went forward and Google had 12 incorporated realtime bidding into third-party 13 exchanges, am I correct you would not have an 14 opinion whether the acquisition was 15 anticompetitive? 16 MR. NAKAMURA: Objection to form. 17 THE WITNESS: I did not conduct that 18 analysis, and I'm not expressing an opinion 19 whether it would be or would not harm 20 competition. 21 MR. ISAACSON: If we can mark this as 22 Exhibit 11.</p>	<p style="text-align: right;">Page 297</p> <p>1 sellers that currently have API integrations in 2 place at the ad server level." 3 At the time of the acquisition, there 4 was only a small handful, and I'm not sure what 5 that is, two fingers, only a small handful of ad 6 sellers that were using these API integrations to 7 talk to third-party -- to connect to third-party 8 advertisers, correct? 9 MR. NAKAMURA: Objection to form. 10 THE WITNESS: That is what this 11 document, as quoted here, states. Not the 12 two fingers part but the, the small handful 13 part. 14 BY MR. ISAACSON: 15 Q Right. The -- and then at 442 of the 16 document, 442, the transition document says in 17 section 2.1 in the first bullet, "Almost all the 18 great Admeld functionality is moving into AdX." 19 That was -- was it your understanding 20 that the Admeld functionality following the 21 acquisition was moving into AdX, with the 22 exception of these APIs that were being used by a</p>

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<p style="text-align: right;">Page 298</p> <p>1 small handful of Admeld sellers?</p> <p>2 A So it's my understanding that the Admeld</p> <p>3 integration did not include these APIs which would</p> <p>4 allow for realtime bids to be provided to</p> <p>5 third-party ad servers.</p> <p>6 Q And did -- was it your understanding</p> <p>7 that that was only being -- that technology that</p> <p>8 was not being integrated was only being used by a</p> <p>9 small handful of sellers?</p> <p>10 MR. NAKAMURA: Objection to form.</p> <p>11 THE WITNESS: So that's consistent with,</p> <p>12 at the time, realtime bidding emerging, which</p> <p>13 is really only a decade. Notably, the other</p> <p>14 two yield managers identified by Google as</p> <p>15 potential merging partners, PubMatic and</p> <p>16 Rubicon started to integrate realtime</p> <p>17 bidding, and so usage was smaller early on</p> <p>18 but grew, and it's telling that PubMatic and</p> <p>19 Rubicon are two of the largest but still very</p> <p>20 distant ad exchange competitors to AdX today.</p> <p>21 This API is used by exchanges to provide</p> <p>22 realtime bids.</p>	<p style="text-align: right;">Page 300</p> <p>1 In the overview, you will see it's</p> <p>2 discussing "an outstanding request from publishers</p> <p>3 has been to support server-side integration, such</p> <p>4 that a publisher's first- or third-party ad server</p> <p>5 would invoke AdX," and then there's a business</p> <p>6 analysis that follows.</p> <p>7 A I don't see a date for this document.</p> <p>8 Q The date of the document is February 5,</p> <p>9 2014. That may come from the metadata.</p> <p>10 A Do you have the metadata for this</p> <p>11 document?</p> <p>12 Q I didn't bring it with me, no. I have</p> <p>13 recorded that it's February, February 5, 2014.</p> <p>14 The -- and you see there's a business</p> <p>15 analysis of the APIs that would connect to</p> <p>16 third-party exchanges?</p> <p>17 A I see the words "Business Analysis" on</p> <p>18 page 003.</p> <p>19 Q And on 003 under "Costs/Risks," the</p> <p>20 first thing it says is, "The development for this</p> <p>21 feature is not easy, and this was proved by</p> <p>22 Admeld. From Brian Adams: 'We did several</p>
<p style="text-align: right;">Page 299</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q And in what years do you think PubMatic,</p> <p>3 Rubicon, and Google launched realtime bidding?</p> <p>4 A So I know at the -- in paragraph 727 of</p> <p>5 my initial report, I note that a 2011 Google slide</p> <p>6 deck noted that PubMatic has less RTV and that</p> <p>7 Rubicon may not at the time, but since then,</p> <p>8 Rubicon is an ad exchange and has incorporated</p> <p>9 realtime bidding.</p> <p>10 Q Right. Do you know which ad exchanges</p> <p>11 launched realtime bidding and when?</p> <p>12 A Sitting here today, I can't give you the</p> <p>13 start dates for every exchange. I don't recall</p> <p>14 right now off the top of my head.</p> <p>15 MR. ISAACSON: All right. This will be</p> <p>16 marked as Exhibit 12.</p> <p>17 (Exhibit 12 was marked for</p> <p>18 identification.)</p> <p>19 BY MR. ISAACSON:</p> <p>20 Q The, the -- Exhibit 12 has also been</p> <p>21 previously marked as Abrontes-Metz Exhibit 19,</p> <p>22 Bates stamp GOOG-DOJ-03610002 through 4.</p>	<p style="text-align: right;">Page 301</p> <p>1 server-side integrations at Admeld (including with</p> <p>2 Criteo), and they were plagued with ongoing</p> <p>3 issues.'"</p> <p>4 Did you do any investigation of</p> <p>5 technical problems with the functionality that</p> <p>6 Admeld had for connecting to third-party</p> <p>7 exchanges?</p> <p>8 MR. NAKAMURA: Objection to form.</p> <p>9 BY MR. ISAACSON:</p> <p>10 Q Third-party ad servers.</p> <p>11 MR. NAKAMURA: Same objection.</p> <p>12 THE WITNESS: So you're saying this is a</p> <p>13 2014 document?</p> <p>14 BY MR. ISAACSON:</p> <p>15 Q Yes.</p> <p>16 A This is around the time, my</p> <p>17 understanding, that Header Bidding was emerging,</p> <p>18 which allowed exchanges to provide realtime bids</p> <p>19 into publisher ad servers, so I noted that it</p> <p>20 appeared as though this technology was becoming</p> <p>21 adopted by ad exchanges.</p> <p>22 Q So I'll move to strike that. That's not</p>

<p style="text-align: right;">Page 302</p> <p>1 even an answer. Just a note you're telling me.</p> <p>2 The question is: Did you do any</p> <p>3 investigation of technical problems with the</p> <p>4 functionality of the Admeld technology that would</p> <p>5 connect to third-party ad servers?</p> <p>6 MR. NAKAMURA: Objection to form.</p> <p>7 THE WITNESS: This is what I was</p> <p>8 attempting to answer in my previous</p> <p>9 statement.</p> <p>10 I'm not opining here as a technical</p> <p>11 expert, but as an economist, I looked at the</p> <p>12 provision of features by other products that</p> <p>13 are available in the market in the same time</p> <p>14 period, that informs the feasibility of those</p> <p>15 features being introduced at all.</p> <p>16 BY MR. ISAACSON:</p> <p>17 Q So does it affect your analysis at all</p> <p>18 when you read a document that says the technology</p> <p>19 that was not incorporated was "plagued" with</p> <p>20 problems?</p> <p>21 MR. NAKAMURA: Objection to form.</p> <p>22 THE WITNESS: So sitting here today --</p>	<p style="text-align: right;">Page 304</p> <p>1 getting folks to flip to DFP than get them</p> <p>2 DA."</p> <p>3 The next paragraph says, "Therefore, we</p> <p>4 should enter into this project only if it's</p> <p>5 truly economically viable. If we can have</p> <p>6 customers use DFP SB instead for DA, this may</p> <p>7 be a much better solution."</p> <p>8 So as I read this, sitting here today,</p> <p>9 the author of this document is describing</p> <p>10 costs and benefits, and one of those benefits</p> <p>11 is denying something to rival servers so that</p> <p>12 more customers would join DFP.</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q The author is discussing alternatives to</p> <p>15 the Admeld technology, correct?</p> <p>16 MR. NAKAMURA: Objection to form.</p> <p>17 BY MR. ISAACSON:</p> <p>18 Q What you were just reading?</p> <p>19 A What I was reading is the cost and risks</p> <p>20 from what this document is describing; third-party</p> <p>21 ad server dynamic allocation, so that paragraph</p> <p>22 or the --</p>
<p style="text-align: right;">Page 303</p> <p>1 it is cited? I mean this -- cited in my</p> <p>2 reports?</p> <p>3 BY MR. ISAACSON:</p> <p>4 Q No, I don't believe this is.</p> <p>5 A So for the reasons I described before, I</p> <p>6 would -- I understand that adding features, as we</p> <p>7 discussed at the beginning, require costs, but the</p> <p>8 extent to which this is in 2014, the ability for</p> <p>9 exchanges to submit realtime bids into publisher</p> <p>10 ad servers, at least via Header Bidding, indicates</p> <p>11 to me that technical considerations were not</p> <p>12 insurmountable.</p> <p>13 Q When you read that the document says</p> <p>14 that the Admeld technology that we are discussing</p> <p>15 "was plagued with ongoing issues," does that give</p> <p>16 you any pause in reaching an opinion that it was</p> <p>17 anticompetitive for Google not to incorporate that</p> <p>18 technology into AdX?</p> <p>19 MR. NAKAMURA: Objection to form.</p> <p>20 THE WITNESS: I would say that the rest</p> <p>21 of that sentence says, dot, dot, dot, "At</p> <p>22 this point, I'm more of the mindset of</p>	<p style="text-align: right;">Page 305</p> <p>1 Q That's not talking about incorporating</p> <p>2 the Admeld technology with APIs, right?</p> <p>3 A My understanding of this document is the</p> <p>4 first page says, "Some publishers have requested</p> <p>5 integration to directly call AdX from their ad</p> <p>6 server, specifically without a client-side</p> <p>7 redirect. This feature was available through</p> <p>8 Admeld."</p> <p>9 So that's the feature I understand this</p> <p>10 document to be discussing.</p> <p>11 Q Right. That's the one we saw was being</p> <p>12 used by a small handful of sellers, correct?</p> <p>13 MR. NAKAMURA: Objection to form?</p> <p>14 THE WITNESS: And so the costs/risks on</p> <p>15 page 2 are talking about, it's my</p> <p>16 understanding, the cost risks of that</p> <p>17 feature, and the quote in the first paragraph</p> <p>18 Costs/Risks is talking about, my</p> <p>19 understanding, providing a feature like that</p> <p>20 to a third-party ad server.</p> <p>21 BY MR. ISAACSON:</p> <p>22 Q Exactly. You are talking about -- not</p>

<p style="text-align: right;">Page 306</p> <p>1 about the fact that they didn't incorporate this</p> <p>2 technology. You are talking about why didn't --</p> <p>3 that they didn't, in your words, "provide a</p> <p>4 feature like that to third-party ad servers."</p> <p>5 MR. NAKAMURA: Objection to form.</p> <p>6 THE WITNESS: So previously, Admeld</p> <p>7 provided its own realtime bids to rival</p> <p>8 servers. When the Admeld acquisition</p> <p>9 happened, Google here is talking about how</p> <p>10 they're not offering the feature that was</p> <p>11 available through Admeld is my understanding</p> <p>12 of this document.</p> <p>13 BY MR. ISAACSON:</p> <p>14 Q Yes, and what you were just saying is</p> <p>15 that they then were discussing whether they should</p> <p>16 developed that feature themselves?</p> <p>17 A I think I was quoting the document that</p> <p>18 said "the development for this feature." That's</p> <p>19 what I was reading from.</p> <p>20 Q The -- do you know who Brian Adams is?</p> <p>21 And to assist you, it's not the singer.</p> <p>22 A I don't -- sitting here today, I don't</p>	<p style="text-align: right;">Page 308</p> <p>1 THE WITNESS: Sorry. I missed that.</p> <p>2 Will you continue to read the quote?</p> <p>3 BY MR. ISAACSON:</p> <p>4 Q No. I was asking the question, so --</p> <p>5 A Oh.</p> <p>6 Q Okay. So I'm sorry if I blurred that</p> <p>7 for you.</p> <p>8 A Yeah.</p> <p>9 Q So the quote is: "Some publishers are</p> <p>10 raising AdX floors on purpose to make us work</p> <p>11 harder."</p> <p>12 Do you see that?</p> <p>13 A I see that part of the quote.</p> <p>14 Q So my question is: If AdX was subject</p> <p>15 to a higher price floor, then Google's advertiser</p> <p>16 customers bidding on AdX had to pay more in order</p> <p>17 to win those impressions; is that correct?</p> <p>18 MR. NAKAMURA: Objection to form.</p> <p>19 THE WITNESS: Not necessarily, and that</p> <p>20 is evidenced by AdX's sell-side DRS program,</p> <p>21 which adjusted margins so that publishers</p> <p>22 could earn more without affecting advertiser</p>
<p style="text-align: right;">Page 307</p> <p>1 recall.</p> <p>2 Q You don't know that he's the founder of</p> <p>3 Admeld?</p> <p>4 MR. NAKAMURA: Objection to form.</p> <p>5 THE WITNESS: I don't recall.</p> <p>6 BY MR. ISAACSON:</p> <p>7 Q All right. If you look at your report</p> <p>8 at paragraph 707, which is discussing unified</p> <p>9 pricing, the opening report, and at page --</p> <p>10 actually, paragraph 711. Well, no. Actually, I'm</p> <p>11 going to ask you about paragraph 707. I</p> <p>12 apologize.</p> <p>13 You quote Jonathan Bellack in paragraph</p> <p>14 707. "Jonathan Bellack wrote that another</p> <p>15 employee raises an interesting point that some</p> <p>16 publics, referring pubs are raising AdX floors on</p> <p>17 purpose to make us work harder."</p> <p>18 If AdX was subject to a higher price</p> <p>19 floor, then Google advertiser customers bidding on</p> <p>20 AdX had to pay more in order to win those</p> <p>21 impressions, correct?</p> <p>22 MR. NAKAMURA: Objection to form.</p>	<p style="text-align: right;">Page 309</p> <p>1 prices, if AdX reduced its take rate, and</p> <p>2 that is what competition tends to do is put</p> <p>3 pressure on the fees.</p> <p>4 BY MR. ISAACSON:</p> <p>5 Q And then if you look at paragraph 711 of</p> <p>6 your report, you say at the end, "A slide from a</p> <p>7 May 2019 presentation reports negative press upon</p> <p>8 subsequent announcement around our intent to unify</p> <p>9 pricing across all demand sources (including</p> <p>10 Header Bidding) and disallow the ability to set</p> <p>11 buyer-specifically floors."</p> <p>12 Do you see that?</p> <p>13 A I see that.</p> <p>14 Could I have a moment to read the</p> <p>15 paragraph?</p> <p>16 Q Sure. I'll get a document ready for</p> <p>17 you.</p> <p>18 (Exhibit 13 was marked for</p> <p>19 identification.)</p> <p>20 BY MR. ISAACSON:</p> <p>21 Q I've handed you Exhibit 13, which has</p> <p>22 also been previously marked as a Abrontes-Metz</p>

<p style="text-align: right;">Page 330</p> <p>1 BY MR. ISAACSON:</p> <p>2 Q In that section have you quantified a</p> <p>3 reduction in quality or quantity of online</p> <p>4 content?</p> <p>5 A In this section, I do not provide a</p> <p>6 specific number for that measure.</p> <p>7 MR. ISAACSON: I'd love to have more</p> <p>8 time, but . . .</p> <p>9 THE VIDEOGRAPHER: This is the end of</p> <p>10 the deposition. We're off the record at</p> <p>11 6:31 p.m.</p> <p>12 (Signature having not been</p> <p>13 waived, the video deposition of</p> <p>14 ROBIN S. LEE, Ph.D. was concluded</p> <p>15 at 6:31 p.m.)</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p>	<p style="text-align: right;">Page 332</p> <p>1 ERRATA SHEET</p> <p>2 IN RE: United States vs. Google, Inc.</p> <p>3 RETURN BY:</p> <p>4 PAGE LINE CORRECTION AND REASON</p> <p>5 _____</p> <p>6 _____</p> <p>7 _____</p> <p>8 _____</p> <p>9 _____</p> <p>10 _____</p> <p>11 _____</p> <p>12 _____</p> <p>13 _____</p> <p>14 _____</p> <p>15 _____</p> <p>16 _____</p> <p>17 _____</p> <p>18 _____</p> <p>19 _____</p> <p>20 _____</p> <p>21 _____</p> <p>22 (DATE) (SIGNATURE)</p> <p>Job No. CS6456904</p>
<p style="text-align: right;">Page 331</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6 ACKNOWLEDGEMENT OF WITNESS</p> <p>7 I, Robin S. Lee, Ph.D., do hereby</p> <p>8 acknowledge that I have read and examined the</p> <p>9 foregoing testimony, and the same is a true,</p> <p>10 correct and complete transcription of the</p> <p>11 testimony given by me, and any corrections</p> <p>12 appear on the attached Errata sheet signed by</p> <p>13 me.</p> <p>14</p> <p>15</p> <p>16 _____</p> <p>17 (DATE) (SIGNATURE)</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22 Job No. CS6456904</p>	<p style="text-align: right;">Page 333</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5 CERTIFICATE OF SHORTHAND REPORTER -- NOTARY PUBLIC</p> <p>6 I, Laurie Donovan, Registered</p> <p>7 Professional Reporter, Certified Realtime</p> <p>8 Reporter, and notary public for the District</p> <p>9 of Columbia, the officer before whom the</p> <p>10 foregoing deposition was taken, do hereby</p> <p>11 certify that the foregoing transcript is a</p> <p>12 true and correct record of the testimony</p> <p>13 given; that said testimony was taken by me</p> <p>14 stenographically and thereafter reduced to</p> <p>15 typewriting under my supervision; and that I</p> <p>16 am neither counsel for, related to, nor</p> <p>17 employed by any of the parties to this case</p> <p>18 and have no interest, financial or otherwise,</p> <p>19 in its outcome.</p> <p>20</p> <p>21 IN WITNESS WHEREOF, I have hereunto set</p> <p>22 my hand and affixed my notarial seal this</p> <p>23rd day of March 2024.</p> <p>My commission expires: July 14, 2027</p> <p>_____</p> <p>LAURIE DONOVAN</p> <p>NOTARY PUBLIC IN AND FOR</p> <p>THE DISTRICT OF COLUMBIA</p>